

PUBLICATIONS 2005



DÉPARTEMENT D'ASTROPHYSIQUE ET DE GÉOPHYSIQUE

UNIVERSITÉ DE LIÈGE

Allée du 6 août, 17 (B5c)
B-4000 Liège
BELGIUM

Tél : 32 – 4 – 366 97 79
Fax : 32 – 4 – 366 97 29

RESEARCH GROUPS

Astronomy and Theoretical Astrophysics

P.-O. BOURGE

M. GABRIEL

N. GREVESSE

M. GODART

G. LENAIN

A. MIGLIO

J. MONTALBAN

O. MOREIRA

A. NOELS

J. PERDANG

R. SCUFLAIRE

S. SOHY

S. THÉADO

A. THOUL

Astrophysics and Image Processing

B. BORGUET

V. CHANTRY

H. DECAUWER

M. GILLON

G. LETAWE

Y. LETAWE

P. MAGAIN

S. SOHY

Extragalactic Astrophysics and Space Observations

O. ABSIL

C. ARPIGNY

J.-F. CLAESKENS

Y. DE ROP

O. GARCET

E. HERWATS

D. HUTSEMEKERS

C. JEAN

E. JAVAUX

C. LIBBRECHT

A. MAGETTE

D. MAWET

D. NAKOS

J. POELS

A. POSPIELSZALSKA

P. RIAUD

D. SLUSE

P.-G. SPRIMONT

J. SURDEJ

High Energy Astrophysics

M. DE BECKER

D. DEFRERE

A. DETAL

E. GOSSET

J.-C. LEYDER

N. LINDER

J. MANFROID

Y. NAZE

J. POELS

G. RAUW

H. SANA

J.-P. SWINGS

J.-M. VREUX

Atmospheric and Planetary Physics

C. BLOCKX

B. BONFOND

N. CAPOUILLEZ

V. COUMANS

J.-C. GERARD

D. GRODENT

J. GUSTIN

B. HUBERT

J.-M. LAURENT

M. MEURANT

A. MOUCHET

G. MUNHOVEN

S. MUNHOVEN

M. OUBERDOUS

A. SAGLAM

Atmospheric and Solar Spectroscopy, Molecular Spectroscopy

Ph. DEMOULIN

I. DUBOIS

P. DUCHATELET

O. FLOCK

E. MAHIEU

Ch. SERVAIS

R. ZANDER

Chemical Oceanography

A. BORGES

B. DELILLE

M. FRANKIGNOULLE

L.-S. SCHIETTECATTE

M. KONE

Irreversible thermomechanics

H. CROISIER

P.C. DAUBY

Th. DESAIVE

M. DONDLINGER

G. LEBON

J. MARGERIT

Physical oceanography and interdisciplinary modeling of marine systems

J.-M. BECKERS

Z. BEN BOUALLEGUE

S. DJENIDI

S. STANICHNY

F. RONDAY

V. TIGNY

L. VANDENBULCKE

M. VAN DER REST

Astronomy and Theoretical Astrophysics

Published papers

- ASPLUND M., N. GREVESSE, A.J. SAUVAL, C. ALLENDE PRIETO AND R. BLOMME, Line formation in solar granulation. VI. [CI], CI, CH and C₂ lines and the photospheric C abundance, *Astron. Astrophys.*, 431, 693-705, 2005
- DE CAT P., M. BRIQUET, J. DASZYŃSKA-DASZKIEWICZ, M.-A. DUPRET, J. DE RIDDER, R. SCUFLAIRE AND C. AERTS, A study of bright southern slowly pulsating B stars. III. Mode identification for singly-periodic targets in spectroscopy, *Astron. Astrophys.*, 432, 1013-1024, 2005
- GRIGAHCÈNE A., M.-A. DUPRET, M. GABRIEL, R. GARRIDO AND R. SCUFLAIRE, Convection-pulsation coupling. I. A mixing-length perturbative theory, *Astron. Astrophys.*, 434, 1055-1062, 2005
- DUPRET M.-A., A. GRIGAHCÈNE, R. GARRIDO, M. GABRIEL AND R. SCUFLAIRE, Convection-pulsation coupling. II. Excitation and stabilization mechanisms in δ Sct and γ Dor stars, *Astron. Astrophys.*, 435, 927-939, 2005
- DUPRET M.-A., A. GRIGAHCÈNE, R. GARRIDO, M. GABRIEL AND R. SCUFLAIRE, Time-dependent convection seismic study of five γ Doradus stars, *Mon. Not. R. Astron. Soc.*, 306, 1143-1152, 2005
- THÉADO S., S. VAUCLAIR, M. CASTRO, S. CHARPINET AND N. DOLEZ, Asteroseismic tests of element diffusion in solar type stars, *Astron. Astrophys.*, 437, 553-560, 2005
- MOREIRA O., T. APPOURCHAUX, G. BERTHOMIEU AND T. TOUTAIN, On the detection of pure sine waves embedded in a spectrum of stochastically excited p modes, *Mon. Not. R. Astron. Soc.*, 357, 191-199, 2005
- DUPRET M.-A., A. GRIGAHCÈNE, R. GARRIDO, J. DE RIDDER, R. SCUFLAIRE AND M. GABRIEL, Time-dependent convection seismic study of δ Sct stars, *Mon. Not. R. Astron. Soc.*, 361, 476-486, 2005
- MIGLIO A. AND J. MONTALBAN, Constraining fundamental stellar parameters using seismology. Application to α Centauri AB, *Astron. Astrophys.*, 441, 615-629, 2005
- THEADO S., S. VAUCLAIR AND M. S. CUNHA, Helium settling and mass loss in magnetic Ap stars. I. The chemical stratification., *Astron. Astrophys.*, 443, 627-641, 2005
- GREVESSE N., M. ASPLUND AND A.J. SAUVAL, The new solar chemical composition. In Element Stratification in Stars: 40 Years of Atomic Diffusion, *Meeting in Honour of Georges Michaud, Château de Mons, France, 6-10 June 2005*, G. Alecian, O. Richard, S. Vauclair (eds). *EAS Publication Series*, 17, 21-30, 2005

- D'ANTONA F., D. CARDINI, M. P. DI MAURO, C. MACERONI, I. MAZZITELLI, AND J. MONTALBAN, 85 Peg A: what age for a low-metallicity solar-like star ? , *Month. Not. R. Astron. Soc.*, 363, 847-856, 2005
- GREVESSE N., Introduction, historical remarks: a view of David Lambert's career, *In Cosmic Abundances as Records of Stellar Evolution and Nucleosynthesis*, eds F.N. Bash and T.G. Barnes, *ASP Conf. Ser.*, 336, 1-10, 2005
- ASPLUND M., N. GREVESSE AND A.J. SAUVAL, The solar chemical composition. In *Cosmic Abundances as Records of Stellar Evolution and Nucleosynthesis*, eds F.N. Bash and T.G. Barnes, *ASP Conf. Ser.*, 336, 25-38, 2005

Papers in press or submitted

- HANDLER, G. M. JERZYKIEWICZ, E. RODRÍGUEZ, K. UYTTERHOEVEN, P.J. AMADO, T.N. DOROKHOVA, N.I. DOROKHOV, E. PORETTI, J.-P. SAREYAN, L. PARRAO, D. LORENZ, D. ZSUFFA, R. DRUMMOND, J. DASZYŃSKA-DASZKIEWICZ, T. VERHOELST, J. DE RIDDER, B. ACKE, P.-O. BOURGE, A.I. MOVCHAN, R. GARRIDO, M. PAPARÓ, T. SAHIN, V. ANTOCI, S.N. UDOVICHENKO, K. CSORBA, R. CROWE, B. BERKEY, S. STEWART, D. TERRY, D.E. MKRTICHIAN AND C. AERTS, Asteroseismology of the β Cephei star 12 (DD) Lacertae: photometric observations, pulsational frequency analysis and mode identification, *Month. Not. R. Astron. Soc.*, 365, 327-338, 2006
- ANTONELLO E., L. MANTEGAZZA, M. RAINER AND A. MIGLIO, Probable nonradial g-mode pulsation in early A-type stars, *Astron. Astrophys.*, 445, L15-L18, 2006
- NOELS A. AND C. AERTS (eds), Distant Worlds, JENAM, Liège, July 4-8, 2005, Proceedings of the Asteroseismology session, *Comm. in Asteroseismology*, 147
- DE CAT P., M. BRIQUET, C. AERTS, K. GOOSSENS, S. SAESEN, J. CUYPERS, K. YAKUT AND R. SCUFLAIRE, M.-A. DUPRET, AND MANY OBSERVERS, Analysis of Mercator data Part I: variable B stars., *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology*, 147, 48-51, 2006
- DUPRET M.-A., A. GRIGAHCÈNE, M. GABRIEL AND R. GARRIDO, Convection-pulsation interaction: theories and applications, *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology*, 147, 61-64, 2006
- GRIGAHCÈNE A., M.-A. DUPRET, R. GARRIDO, M. GABRIEL AND R. SCUFLAIRE, Instability strip for pre-main-sequence stars, *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology*, 147, 69-71, 2006
- ASPLUND M., N. GREVESSE AND A.J. SAUVAL, The new solar abundances. Part I: the observations, *The new solar Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology*, 147, 76-79, 2006
- MONTALBAN J., A. MIGLIO, S. THÉADO, A. NOELS AND N. GREVESSE, The new solar abundances. Part II: The crisis and possible solutions, *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology*, 147, 80-84, 2006

- DUPRET M.-A., R. SAMADI, A. GRIGAHCÈNE, M.-J. GOUPIL AND M. GABRIEL, Non-local time-dependent treatments of convection models in A-G type stars, *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. In Asteroseismology, 147, 85-88, 2006*
- MIGLIO A., J. MONTALBAN AND A. NOELS, Effects of "extra-mixing" processes on the periods of high-order gravity modes in main-sequence stars. *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. In Asteroseismology, 147, 89-92, 2006*
- LENAIN G., R. SCUFLAIRE, M.-A. DUPRET AND A. NOELS, The ε -mechanism in PMS and MS δ Scuti stars., *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology, 147, 93-96, 2006*
- THÉADO S. AND M. CUNHA, Excitation of oscillations on roAp stars: the roles of He settling and winds., *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology, 147, 101-104, 2006*
- BOURGE P.-O., G. ALECIAN, A. THOUL, R. SCUFLAIRE AND S. THÉADO, Radiative forces and pulsations in β Cephei stars, *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology, 147, 105-108, 2006*
- GODART M., R. SCUFLAIRE, A. THOUL AND A. NOELS, Polytropes as simple models of β Cephei stars. *Distant Worlds, JENAM, Liège, July 4-8, 2005. Comm. in Asteroseismology, 147, 117-120, 2006*
- BOURGE P.-O. AND G. ALECIAN, Do radiative Forces in β Cephei Stars Have an Effect on the excitation of their Pulsations, *In Astrophysics of Variable Stars, Pecs, Hungary, 5-10 September 2005, C. Sterken and C. Aerts (eds). ASP Conference Series, 349, 2006*
- GODART M., Can beta Cephei Variables be Modelled with Polytropes?, *In Astrophysics of Variable Stars, Pecs, Hungary, 5-10 September 2005, C. Sterken and C. Aerts (eds). ASP Conference Series, 349, 2006*
- LENAIN G., Limit of the Convective Core in delta Scuti Stars, *In Astrophysics of Variable Stars, Pecs, Hungary, 5-10 September 2005, C. Sterken and C. Aerts (eds). ASP Conference Series, 349, 2006.*
- MIGLIO A., Signatures of Convective Cores in Gravity Modes, . *In Astrophysics of Variable Stars, Pecs, Hungary, 5-10 September 2005, C. Sterken and C. Aerts (eds). ASP Conference Series, 349, 2006.*
- MOREIRA O., Red Giants as Asteroseismology Targets, *In Astrophysics of Variable Stars, Pecs, Hungary, 5-10 September 2005, C. Sterken and C. Aerts (eds). ASP Conference Series, 349, 2006.*
- DUPRET M.-A., A. GRIGAHCENE, R. GARRIDO, J. DE RIDDER, A. MOYA, J.-C. SUAREZ, R. SCUFLAIRE, M. GABRIEL AND M.-J. GOUPIL. , Theoretical Aspects of g-mode Pulsations in γ Doradus Stars. *Stellar Pulsation and Evolution, Villa Mondragone Monte Porzio Catone, Rome, June 19-24, 2005. To appear in Mem. S.A.It.*

- DUPRET M.-A., A. GRIGAHCÈNE, R. GARRIDO, J. DE RIDDER AND R. SCUFLAIRE, Application of Time-Dependent Convection models to the photometric mode identification in δ Scuti stars. , *Stellar Pulsation and Evolution, Villa Mondragone Monte Porzio Catone, Rome, June 19-24, 2005. To appear in Mem. S.A.It.*
- DUPRET M.-A., A. GRIGAHCENE, R. GARRIDO, J. DE RIDDER AND R. SCUFLAIRE , Application of Time-Dependent Convection models to the photometric mode identification in γ Doradus stars. *Stel, Lar Pulsation and Evolution, Villa Mondragone Monte Porzio Catone, Rome, June 19-24, 2005. To appear in Mem. S.A.It.*
- MONTALBAN J. AND A. MIGLIO, Evolution and seismology of alpha Centauri, *Stellar Pulsation and Evolution, Villa Mondragone Monte Porzio Catone, Rome, June 19-24, 2005. To appear in Mem. S.A.It.*

Astrophysics and Image Processing

Published papers

- DECAUWER H., E. JEHIN, G. PARMENTIER AND P. MAGAIN, Abundance correlations in mildly metal-poor stars. II. Light elements (C to Ca), *Astron. Astrophys.*, 433, 285-295, 2005
- GILLON M., F. COURBIN, P. MAGAIN AND B. BORGUET, On the potential of extrasolar planet transit surveys, *Astron. Astrophys.*, 442, 731-744, 2005
- JAKOBSSON P., J. HJORTH, I. BURUD, G. LETAWE, C. LIDMAN AND F. COURBIN, An optical time delay for the double gravitational lens system FBQ 0951+2635, *Astron. Astrophys.*, v.431, 103-109, 2005
- JONSELL K., B. EDVARDSSON, B. GUSTAFSSON, P. MAGAIN, P.E. NISSEN AND M. ASPLUND, Chemical abundances in 43 metal-poor stars, *Astron. Astrophys.*, 440, 321-343, 2005
- MAGAIN P., G. LETAWE, F. COURBIN, P. JABLONKA, K. JAHNKE, G. MEYLAN AND L. WISOTZKI, Discovery of a bright quasar without a massive host galaxy, *Nature*, 437, 381-384, 2005

Papers in press or submitted

- GILLON M. AND P. MAGAIN, High precision determination of the atmospheric parameters and abundances of the COROT main targets, *Astron. Astrophys.*
- EIGENBROD A., F. COURBIN, G. MEYLAN, C. VUISOZ AND P. MAGAIN, COSMOGRAIL: the COSmological MONitoring of GRAVItational Lenses III. Redshift of the lensing galaxy in eight gravitationally lensed quasars, *Astron. Astrophys.*

- EIGENBROD A., F. COURBIN, S. DYE, G. MEYLAN, D. SLUSE, P. SAHA, C. VUISOZ AND P. MAGAIN, COSMOGRAIL: the COSmological MOnitoring of GRAvitational Lenses II. SDSS J0924+0219: the redshift of the lensing galaxy, the quasar spectral variability and the Einstein rings, *Astron. Astrophys.*

Extragalactic Astrophysics and Space Observations

Published papers

- ABSIL O., A. LÉGER, M. OLLIVIER, J. SCHNEIDER, D. ROUAN, X. LEYRE, D. MOURARD, C. MAN, G. ROUSSET, F. ALLARD, F. MALBET, S. UDRY AND E. MARTIN, Pegase: a space interferometer for the spectro-photometry of Pegasides, *Comptes-rendus du 37ème Colloque International d'Astrophysique de Liège*, ed. J. Surdej, D. Caro & A. Detal, 183-190, 2005
- CHIAPPETTI, L., M. TAJER, G. TRINCHIERI, D. MACCAGNI, L. MARASCHI, L. PAIORO, M. PIERRE, J. SURDEJ, O. GARCET, O. LE FÈVRE, E. BERTIN, H.J. MCCRACKEN, Y. MELLIER, S. FOUCAUD, M. RADOVICH, V. RIPEPI, AND M. ARNABOLDI, THE XMM-LSS SURVEY : THE XMDS/VVDS 4 σ CATALOGUE, *Astron. Astrophys.* 439, 413-425, 2005
- CLAESKENS, J.-F., A. SMETTE AND J. SURDEJ, Quasars with GAIA : identification and astrophysical parameters, *Proceedings of the Symposium "The Three-Dimensional Universe with GAIA"*, C. Turon, O'Flaherty, K.S., Perryman M.A.C., Holland, ESA Publications Division, SP-576, 667-673, 2005
- CLAESKENS, J.-F., A. SMETTE AND J. SURDEJ, Quasars with GAIA : identification and astrophysical parameters, *Internal report, Dresden University*, 1-37, 2005
- GRATADOUR D., D. ROUAN, A. BOCCALETTI, P. RIAUD AND Y. CLÉNET, Four quadrant phase mask K-band coronagraphy of NGC 1068 with NAOS-CONICA at VLT, *Astron. Astrophys.*, 429, 433-437, 2005
- HUTSEMÉKERS D., R. CABANAC, H. LAMY AND D. SLUSE, Mapping extreme-scale alignments of quasar polarization vectors, *Astron. Astrophys.*, 441, 915-930, 2005
- HUTSEMÉKERS D., J. MANFROID, E. JEHIN, C. ARPIGNY, A. COCHRAN, R. SCHULZ, J.A. STÜWE AND J.-M. ZUCCONI, Isotopic abundances of carbon and nitrogen in Jupiter-family and Oort Cloud comets, *Astron. Astrophys.*, 440, L21-L24, 2005
- LENA P., O. ABSIL, V. BORKOWSKI, E. HERWATS, D. MAWET, S. QUANZ AND P. RIAUD, Conclusions and perspectives, *Comptes-rendus du 37ème Colloque International d'Astrophysique de Liège*, ed. J. Surdej, D. Caro & A. Detal, 203-229, 2005

- MANFROID J., E. JEHIN, D. HUTSEMEKERS, A. COCHRAN, J.-M. ZUCCONI, C. ARPIGNY, R. SCHULZ AND J.A. STÜWE, Isotopic abundance of nitrogen and carbon in distant comets, *Astron. Astrophys.* 432, L5-L8, 2005
- MAWET D., P. RIAUD, O. ABSIL AND J. SURDEJ, Annular Groove Phase Mask Coronagraph, *ApJ*. 633, 1191-1200, 2005
- MAWET D., P. RIAUD, J. SURDEJ AND J. BAUDRAND, Subwavelength surface-relief gratings for stellar coronagraphy, *Applied Optics*, 44, 7313-7321, 2005
- MAWET D., C. LENAERTS, P. RIAUD, J. SURDEJ, S. HABRAKEN AND D. VANDORMAEL, Use of Subwavelength Gratings in TIR Incidence as Achromatic Phase Shifters, *Optic Express*. 13, 8686-8692, 2005
- MAWET D., P. RIAUD, O. ABSIL, J. BAUDRAND AND J. SURDEJ, The Four Quadrant-ZOG and Annular Groove Phase Mask Coronagraphs, *Proc. of Spie*, 5905, "Techniques and Instrumentation for Detection of Exoplanet II", 2005
- MAWET D., P. RIAUD, Subwavelength gratings for phase mask coronagraphy: the 4QZOG and AGPM coronagraphs, *Proc. IAU 200, "Direct Imaging of Exoplanets: Science and Techniques"*, IAU Colloquium, eds Claude Aime, Farrokh Vakili, 2005
- MEECH, K.J., et al., including C. ARPIGNY, D. HUTSEMEKERS AND J. MANFROID, Deep impact: observations from a worldwide Earth-based campaign, *Science* 310, 265-269, 2005
- NAKOS TH., F. COURBIN, J. POELS, C. LIBBRECHT, P. MAGAIN, J. SURDEJ, J. MANFROID, I. BURUD, J. HJORTH, L. GERMANY, C. LIDMAN, G. MEYLAN, E. POMPEI, J. PRITCHARD AND I. SAVIANE, Photometric monitoring of the doubly imaged quasar UM 673: possible evidence for chromatic microlensing, *Astron. Astrophys.*, 441, 443-450, 2005
- MOREAU, O., C. LIBBRECHT, D.-W. LEE, J. SURDEJ, Accurate photometric light curves of the lensed components of Q2237+0305 derived with an optimal image subtraction technique: Evidence for microlensing in image A, *Astron. Astrophys.* 436, 479-492, 2005
- RIAUD P., S. CLADÉ S., O. ABSIL AND L. ARNOLD, Basic and future concepts of interferometers, including the confusion effect, *Comptes-rendus du 37ème Colloque International d'Astrophysique de Liège*, ed. J. Surdej, D. Caro & A. Detal, 1-16, 2005
- RIAUD P., D. MAWET AND O. ABSIL, Limitation of the pupil replication technique in presence of instrumental defects, *ApJ* 628, L81-L84, 2005
- SLUSE D., D. HUTSEMEKERS, H. LAMY, R. CABANAC AND H. QUINTANA, New optical polarization measurements of quasi-stellar objects. The data, *Astron. Astrophys.* 433, 757-764

Papers in press or submitted

- ABSIL O., R. DEN HARTOG, P. GONDOIN, P. FABRY, R. WILHELM, P. GITTON AND F. PUECH, Performance study of ground-based infrared Bracewell interferometers - Application to the detection of exozodiacal dust disks with GENIE, *Astron. Astrophys.* 448, 787-800
- ABSIL O., E. DI FOLCO, A. MÉRAND, V. COUDÉ DU FORESTO, J.-C. AUGEREAU, J. AUFDENBERG, P. KERVELLA, S. RIDGWAY, D. BERGER, T. TEN BRUMMELAAR, J. STURMANN, L. STURMANN, N. TURNER AND H. MCALISTER, Circumstellar material in the Vega inner system revealed by CHARA/FLUOR, *Astron. Astrophys.*
- ANDREON, S., H. QUINTANA, M. TAJER, G. GALAZ AND J. SURDEJ, The Butcher-Oemler effect at $z \sim 0.35$: a change in perspective, *Mon. Not. R. Astron. Soc.*
- CABANAC R., D. HUTSEMEKERS, D. SLUSE AND H. LAMY, Large scale correlations of quasar polarisation vectors: hints of extreme scale structures, *In Astronomical Polarimetry: Current status and future directions*, A. Adamson et al. (eds), *A.S.P. Conference Series 343 (2005)*
- CHAZELAS B., F. BRACHET, P. BORDE, B. MENNESSON, M. OLLIVIER, O. ABSIL, A. LABEQUE, C. VALETTE AND A. LEGER, Instrumental Stability Requirements for Exoplanet Detection with a Nulling Interferometer - Variability Noise is a Central Issue, *Applied Optics* 45(5), 984-992
- CLAESKENS J.-F., D. SLUSE, P. RIAUD AND J. SURDEJ, Multi wavelength study of the gravitational lens system RXS J1131-1231: II Lens model and source reconstruction, *Astron. Astrophys.*
- CLAESKEN J.-F., A. SMETTE, J. SURDEJ, Quasars with GAIA: Identification and Astrophysical Parameters, 2006, *Proceedings of the Gaia Symposium "The Three Dimensional Universe with Gaia"*, European Space Agency Special Publications series SP-576
- CLAESKENS J.-F., A. SMETTE, L. VANDENBULCKE AND J. SURDEJ, Identification and redshift determination of QSOs with medium band photometry : application to GAIA, *Mon. Not. R. Astron. Soc.*
- GANDHI P., O. GARCET, DISSEAU, F. PACAUD, M. PIERRE, A. GUEGUEN, D. ALLOIN, L. CHIAPPETTI, E. GOSSET, D. MACCAGNI, J. SURDEJ, AND I. VALTCHANOV, AGN in the XMM Large Scale Structure Survey: X-ray properties and angular correlation function, *Astron. Astrophys.*
- HAMDANI S., L. ARNOLD, C. FOELMI, J. BERTHIER, D. BRIOT, P. FRANÇOIS, P. RIAUD AND J. SCHNEIDER, New test of detectability of exolife using Earthshine spectra, *Astron. Astrophys.*
- MAWET D., P. RIAUD, J. BAUDRAND, O. DUPUIS, P. BAUDOZ, A. BOCCALETTI AND D. ROUAN, The Four-Quadrant Phase-Mask Coronagraph: White light laboratory results with an achromatic device, *Astron. Astrophys.* 448, 801-808

- PACAUD, F., M. PIERRE, A. REFREGIER, A. GUEGUEN, J.-L. STARCK, I. VALTCHANOV, B. ALTIERI, L. CHIAPPETTI, P. GANDHI, O. GARCET, E. GOSSET, T.J. PONMAN, A.M. READ AND J. SURDEJ, The XMM Large Scale Structure survey : the X-ray pipeline and survey selection function, *Mon. Not. R. Astron. Soc.*
- PIERRE M., F. PACAUD, P.A. DUC, J. WILLIS, S. ANDREON, I. VALTCHANOV, B. ALTIERI, G. GALAZ, A. GUEGUEN, J.-P. LEFÈVRE, O. LEFÈVRE, T. PONMAN, P.-G. SPRIMONT, J. SURDEJ, C. ADAMI, A. ALSHINO, M. BREMER, L. CHIAPPETTI, A. DETAL, O. GARCET, E. GOSSET, C. JEAN, D. MACCAGNI, C. MARINONI, H. QUINTANA AND A. READ, The XMM-LSS survey : a complete X-ray cluster sample over the D1 CFHTLS area, *Mon. Not. R. Astron. Soc.*
- SLUSE D., J.-F. CLAESKENS, B. ALTIERI, R.A. CABANAC, O. GARCET, D. HUTSEMEKERS, C. JEAN, A. SMETTE AND J. SURDEJ, Multi wavelength study of the gravitational lens system RXS J113155.4-123155. I. Multi-epoch optical and near-infrared imaging, *Astron. Astrophys.*
- SURDEJ J., J.-F. CLAESKENS AND D. SLUSE, Gravitational lensing and anomalous redshifts, *Invited paper to be published in the proceedings of the International Colloquium "Cosmology : facts and problems", Collège de France (Paris) 8-11 June 2004, Eds. Pecker, J.-C., Narlikar, J.*
- WILLIS, J.P., F. PACAUD, I. VALTCHANOV, M. PIERRE, T.J. PONMAN, A.M. READ, S. ANDREON, B. ALTIERI, H. QUINTANA, S. DOS SANTOS, M. BIRKINSHAW, M. BREMER, P.A. DUC, G. GALAZ, E. GOSSET, L. JONES AND J. SURDEJ, The XMM Large-Scale Structure survey : An initial sample of galaxy groups and clusters to a redshift $z < 0.6$, *Mon. Not. R. Astron. Soc.*
- AUFDENBERG J., A. MÉRAND, V. COUDÉ DU FORESTO, O. ABSIL, E. DI FOLCO, S. RIDGWAY, J. STURMANN, L. STURMANN, T. TEN BRUMMELAAR, N. TURNER, D. BERGER AND H. MCALISTER, First results from the CHARA Array V: limb-darkening observations of Vega consistent with a pole-on, rapidly rotating star, *à ApJ, submitted*

High Energy Astrophysics

Published papers

- BLOMME R., S. VAN LOO, M. DE BECKER, G. RAUW, M.C. RUNACRES, D.Y.A. SETIA GUNAWAN AND J.M. CHAPMAN, Non-thermal radio emission from O-type stars. I. HD168112, *Astron. Astrophys.*, 436, 1033-1040, 2005
- BOYAJIAN T., T.D. BEAULIEU, D.R. GIES, E. GRUNDSTROM, W. HUANG, M.V. MCSWAIN, R.L. RIDDLE, D.W. WINGERT AND M. DE BECKER, The Massive Runaway Stars HD 14633 and HD 15137, *Astrophys. J.*, 621, 978-984, 2005

- DE BECKER M., G. RAUW AND J.-P. SWINGS, On the Multiplicity of the O-Star Cyg OB2 #8a and its Contribution to the gamma-ray Source 3EG J2033+4118, *Astrophysics & Space Sciences*, 297, 291-298, 2005
- DE BECKER M., G. RAUW, R. BLOMME, J.M. PITTARD, I.R. STEVENS AND M.C. RUNACRES, An XMM-Newton observation of the multiple system HD 167971 (O5-8V + O5-8V + (O8I)) and the young open cluster NGC 6604, *Astron. Astrophys.*, 437, 1029-1046, 2005
- DE BECKER M. AND G. RAUW, Evidence for phase-locked X-ray variations from the colliding wind massive binary Cyg OB2 #8A, *Proceedings of "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, Eds. G. Rauw, Y. Nazé, R. Blomme and E. Gosset*, 73-76, 2005
- DE BECKER M. AND G. RAUW, A spectroscopic investigation of the young open cluster IC 1805, *Proceedings of "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, Eds. G. Rauw, Y. Nazé, R. Blomme AND E. Gosset*, 111-114, 2005
- GOSSET E., Y. NAZE, J.-F. CLAESKENS J.-F., G. RAUW, J.-M. VREUX AND H. SANA, An XMM-Newton look at the Wolf-Rayet star WR40. The star itself, its nebula and its neighbours, *Astron. Astrophys.* 429, 685, 2005
- GOSSET E., G. RAUW, J. MANFROID, E. ANTOKHINA, I.R. STEVENS AND H. SANA, Preliminary results of an observational campaign aiming at the study of the binary system LSS3074, *In "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAL 2005 "Distant Worlds", eds. G. Rauw, Y. Nazé, R. Blomme and E. Gosset*, pp.77-80, 2005
- LEYDER J.-C. AND G. RAUW, A survey for gamma-ray emission from OB associations with INTEGRAL: some preliminary results, *"Massive Stars and High Energy Emission in OB Associations" Proceedings JENAM 2005 (Distant Worlds)*, 115-118, 2005
- LEYDER J.-C. AND G. RAUW, Searching for continuum gamma-ray emission from OB associations with INTEGRAL, some preliminary results, *"Populations of high-energy sources in Galaxies" Proceedings IAU Symposium No. 230*, 2005
- LINDER N. AND G. RAUW, The XMM-Newton view of Plaskett's star and its surroundings, in *Massive Stars and High-Energy Emission in OB Associations, Proc. JENAM 2005*, eds. G. Rauw, Y. Nazé, R. Blomme, E. Gosset, 53-56, 2005
- NAZE Y., I.I. ANTOKHIN, H. SANA, E. GOSSET AND G. RAUW, Optical spectroscopy of X-Mega targets - V. The spectroscopic binary HD 93161 A and its visual companion HD 93161 B, *MNRAS*.359..688N, 2005
- NAZE Y., Stars in the eyes, birth of a vocation ?, *Proceedings of "Astrophysics AND how to attract young people into Physics", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, 2005, Eds. Yael Nazé, Magda Stavrinschi & Martine Vanherck*, p. 24 - 27, 2005

- NAZE Y., G. RAUW, N.R. WALBORN AND I.D. HOWARTH, The peculiar Of?p stars HD 108 and HD 191612, *Proceedings of "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, 2005, Eds. G. Rauw, Y. Nazé, R. Blomme AND E. Gosset, p. 31 – 34, 2005*
- RAUW G., P.A. CROWTHER, M. DE BECKER, E. GOSSET, Y. NAZE, H. SANA, K.A. VAN DER HUCHT, J.-M.VREUX AND P.M. WILLIAMS, The spectrum of the very massive binary system WR 20a (WN6ha + WN6ha): Fundamental parameters and wind interactions, *Astron. Astrophys.*, 432, 985-998, 2005
- RAUW G., M. DE BECKER AND N. LINDER, XMM-Newton observations of the Cyg OB2 association, *In Massive Stars and High-Energy Emission in OB Associations, Proc. JENAM 2005, eds. G. Rauw, Y. Nazé, R. Blomme, E. Gosset, 103-106, 2005*
- RAUW G., H. SANA, E. GOSSET, M. DE BECKER, J. ARIAS, N. MORRELL, P. EENENS AND D. STICKLAND, On the multiplicity of the non-thermal radio emitters 9 Sgr and HD16811, *In Massive Stars and High-Energy Emission in OB Associations, Proc. JENAM 2005, eds. G. Rauw, Y. Nazé, R. Blomme, E. Gosset, 85-88, 2005*
- SANA H., A Multi-Wavelength Study of a Selected Sample of Massive Stars in NGC 6231 and Contribution to the Modelling of X-ray Emission in Colliding Winds Binaries, *PhD Thesis, Liège University, 295 pages, 2005*
- SANA H., G. RAUW AND E. GOSSET, The young open cluster NGC 6231: five years of investigations, *Proceedings of "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, 2005, Eds. G. Rauw, Y. Nazé, R. Blomme AND E. Gosset, p. 107 – 110, 2005*
- SANA H., E. GOSSET, G. RAUW, E. ANTOKHINA, P. ROYER, J. MANFROID AND J.-M. VREUX, CPD-41° 7742: an unusual wind interaction, *Proceedings of "Massive Stars and High-Energy Emission in OB Associations", a workshop of the JENAM 2005, "Distant Worlds", held in Liège (Belgium), July 4 - 7, 2005, Eds. G. Rauw, Y. Nazé, R. Blomme AND E. Gosset, p. 89 – 92, 2005*
- SANA H., E. ANTOKHINA, P. ROYER, J. MANFROID, E. GOSSET, G. RAUW AND J.-M. VREUX, The massive binary CPD - 41° 7742. II. Optical light curve and X-ray observations, *Astron. Astroph.* 441, 2005
- SWINGS J.P. AND S. VOLONTE, L'ère de l'espace, *Dans « Larousse du Ciel », Comprendre l'astronomie du XXIème siècle, sous la direction de Ph. de la Cotardière et de R. Ferlet, 189-209, 2005*
- WILLIAMS P.M., K.A. VAN DER HUCHT AND G. RAUW, Are WC9 Wolf-Rayet stars in colliding-wind binaries?, in *Massive Stars and High-Energy Emission in OB Associations, Proc. JENAM 2005, eds. G. Rauw, Y. Nazé, R. Blomme, E. Gosset, 65-68, 2005*

Papers in press or submitted

- BYKOVA.M., A.M. KRASSILCHTCHIKOV, YU.A. UVAROV, F. LEBRUN, M. RENAUD, R. TERRIER, H. BLOEMEN, B. MCBREEN, T.J.-L. COURVOISIER, M.YU. GUSTOV, W. HERMSEN, J.-C. LEYDER, T.A. LOZINSKAYA, G. RAUW AND J.-P. SWINGS, INTEGRAL detection of hard X-rays from NGC 6334: Nonthermal emission from colliding winds or an AGN?, *Astron. Astrophys.*
- LEYDER J.-C., J. CHENEVEZ, M. T. FIOCCHI, M. REVNIVTSEV, J. PAUL, T. OOSTERBROE, M. MAS-HESSE AND A. STRONG, Hard X-ray brightening of Ginga 1843+009 seen by INTEGRAL, *The Astronomer's Telegram*, 472
- SANA H., E. GOSSET E., G. RAUW, H. SUNG AND J.-M. VREUX, An XMM-Newton view of the young open cluster NGC 6231: I. The catalogue, *Astron. Astrophys.*
- SANA H., E. GOSSET, G. RAUW AND J.-M. VREUX, An exceptional X-ray view of the young open cluster NGC 6231: what XMM-Newton has taught us, *To appear in "The X-Ray Universe 2005", ESA Symposium held at El Escorial, Madrid (Spain), 26-30 Sep 2005*
- SWINGS J.-P., A grandfather's question: why have these stars been called B[e]s?, *In Stars with the B[e] phenomenon, ASP Conference Series, M. Kraus and A.S. Miroshnichenko eds*

Atmospheric and Planetary Physics

Published papers

- ELSNER R.F., N. LUGAZ, J.H. WAITE., T.E. CRAVENS., G.R. GLADSTONE, P. FORD, D. GRODENT, A. BHARDWAJ, R.J. MACDOWALL, M.D. DESCH AND T. MAJEED, Simultaneous Chandra X-ray, Hubble Space Telescope ultraviolet and Ulysses Radio observations of Jupiter's aurora, *J. Geophys. Res.*, 110, A01207, doi:10.1029/2004JA010717, 2005
- COWLEY S.W.H., S. V. BADMAN, E. J. BUNCE, J. T. CLARKE, J.-C. GÉRARD, D. GRODENT, C.M. JACKMAN, S.E. MILAN AND T.K. YEOMAN, Reconnection in a rotation-dominated magnetosphere and its relation to Saturn's auroral dynamics, *J. Geophys. Res.*, 110, A02201, doi:10.1029/2004JA010796, 2005
- CLARKE J.T., J.-C. GÉRARD, D. GRODENT, S. WANNAWICHIAN, J. GUSTIN, J. CONNERNEY, F. CRARY, M. DOUGHERTY, W. KURTH, S.W.H. COWLEY, E.J. BUNCE, T. HILL AND J. KIM, Morphological differences between Saturn's ultraviolet aurorae and those of Earth and Jupiter, *Nature*, 433, 717-719, 2005
- CRARY F.J., J.T. CLARKE, M.K. DOUGHERTY, P. HANLON, K.C. HANSEN, J.T. STEINBERG, B.L. BARRACLOUGH, A.J. COATES, J.-C. GÉRARD, D. GRODENT, W.S. KURTH, D.G. MITCHELL, A.M. RYMER AND

D.T. YOUNG, Solar wind dynamic pressure and electric field as the main factors controlling Saturn's aurorae, *Nature*, 433, 720-722, 2005

- KURTH W.S., D.A. GURNETT, J.T. CLARKE, P. ZARKA, M.D. DESCH, M.L. KAISER, B. CECCONI, A. LECACHEUX, W.M. FARELL, P. GALOPEAU, J.-C. GÉRARD, D. GRODENT, R. PRANGÉ, M.K. DOUGHERTY AND F.J. CRA, An Earth-like correspondence between Saturn's auroral features and radio emission, *Nature*, 433, 722-724, 2005
- AJELLO, J., P. V. PALLE, H. ABGRALL, E. ROUEFF, A. BHARDWAJ AND J. GUSTIN, The Electron Excited Ultraviolet Spectrum of HD: Cross Sections and Transition Probabilities, *ApJ* 314-328, 2005
- GRODENT D., J.-C. GÉRARD, S.W.H. COWLEY, E.J. BUNCE AND J.T. CLARKE, Variable morphology of Saturn's southern ultraviolet aurora, *J. Geophys. Res.*, 110, A07215, doi:10.1029/2004JA010983., 2005
- MEURANT M., J.-C. GÉRARD, C. BLOCKX, V. COUMANS, B. HUBERT, M. CONNORS, L.R. LYONS AND E. DONOVAN, Comparison of intense nightside shock-induced precipitation and substorm activity, *J. Geophys. Res. (Space Physics)*, 110, A7, doi: 10.1029/2004JA010916, 2005
- HUBERT B., J.C. GÉRARD, S. B. MENDE AND S. A. FUSELIER, Properties of Dayside Subauroral Proton Flashes observed with IMAGE-FUV, in *Inner Magnetosphere Interactions: New Perspectives From Imaging*, James L. Burch, Michael Schulz, Harlan Spence, Editors AGU Geophysical Monograph Series, 15, ISBN 0-87590-424-6 9, 2005
- GÉRARD J.C., V.I. SHEMATOVICH, D.V. BISIKALO AND D. LUMMERZHEIM, A Monte Carlo model of auroral hydrogen emission line profiles, *Ann. Geophys.*, 23, 1-8, ID :1432-0576/ag/2005-23-1, 2005
- MILAN S.E., B. HUBERT AND A. GROCOTT, Formation and motion of a transpolar arc in response to dayside and nightside reconnections, *J. Geophys. Res. (Space Physics)*, 110, A01212, doi: 10.1029/2004JA010835, 2005
- SHEMATOVICH V. I., D. V. BISIKALO AND J.-C. GÉRARD, An auroral source of hot oxygen in the geocorona, *Geophys. Res. Lett.*, 32, L02105, doi:10.1029/2004GL021912, 2005
- AJELLO, J., W. PRYOR, L. ESPOSITO, I. STEWART, W. MCCLINTOCK, J. GUSTIN, D. GRODENT, J.-C. GÉRARD AND J.T. CLARKE, The Cassini Campaign Observations of the Jupiter Aurora by the Ultraviolet Imaging Spectrograph and the Space Telescope Imaging Spectrograph, *Icarus*, 179, 327-345, 2005
- BADMAN S.V., E.J. BUNCE, J.T. CLARKE, S.W.H. COWLEY, J.-C. GÉRARD, D. GRODENT AND S.E. MILAN, Open flux estimates in Saturn's magnetosphere during the January 2004 Cassini-HST campaign AND implications for reconnection rates, *J. Geophys. Res. (Space Physics)*, 110, A11216, doi :10,1029/2005JA011240, 2005

- BLOCKX C., J-C GERARD, M. MEURANT, B. HUBERT AND V. COUMANS, Far-Ultraviolet remote sensing of the isotropic boundary and magnetotail stretching, *J. Geophys. Res.*, 110,A11215, doi : 10.1029/2005JA011103, 2005
- MELIN H., S. MILLER, T. STALLARD AND D. GRODENT, Non-LTE effects on H3+ emission in the Jovian upper atmosphere, *Icarus*, 178, 97-103, 2005
- GÉRARD J.-C., E.J. BUNCE, D. GRODENT, S.W.H. COWLEY, J.T. CLARKE AND S.V. BADMAN, Signature of Saturn's auroral cusp : simultaneous HST FUV observations and upstream solar wind monitoring, *J. Geophys. Res.*, 110, A11201, doi: 10.1029/2005JA011094, 2005
- PRYOR W., A.I. STEWART, L. ESPOSITO, W. MCCLINTOCK, J.E. COLWELL, A. JOUCHOUX, A.J. STEFFL, D.E. SHEMANSKY, J.M. AJELLO, R.A. WEST, C.J. HANSEN, B.T. TSURUTANI, W.S. KURTH, J. B. HOSPODARSKY, D.A. GURNETT, K.C. HANSEN, J.H. WAITE JR, F. CRARY, D.T. YOUNG, N. KRUPP, J.T. CLARKE, D. GRODENT AND M.K. DOUGHERTY, Cassini UVIS observations of Jupiter's auroral variability, *Icarus*, 178, 312-326, 2005
- ORR, J. C., V. J. FABRY, O. AUMONT, L. BOPP, S. C. DONEY, R. M. FEELY, A. GNANADESIKAN, N. GRUBER, A. ISHIDA, F. JOOS, R.M. KEY, K. LINDSAY, E. MAIER-REIMER, R. MATEAR, P. MONFRAY, A. MOUCHET, R.G. NAJJAR, G.-K. PLATTNER, K.B. RODGERS, C.L. SABINE, J. L. SARMIENTO, R. SCHLITZER, R. D. SLATER, I. TOTTERDELL, M.-F. WEIRIG, Y. YAMANAKA AND A. YOOL, Anthropogenic ocean acidification over the 21st century and its impact on marine calcifying organisms, *Nature*, 437, 681-686, 2005
- KÖHLER, P., H. FISCHER, G. MUNHOVEN AND R.E. ZEEBE, Quantitative interpretation of atmospheric carbon records over the last glacial termination, *Global Biogeochemical Cycles* 19, GB4020, doi:10.1029/2004GB002345, 2005
- GRARD A., L.M. FRANÇOIS, C. DESSERT, B. DUPRE AND Y. GODDERIS, Basaltic volcanism and mass extinction at the Permo-Triassic boundary: environmental impact and modeling of the global carbon cycle, *Earth Planet. Sci. Lett.*, 234, 207-221, 2005
- FRANÇOIS L., A. GRARD AND Y. GODDERIS, Modelling atmospheric CO2 changes at geological timescales, In : *Precambrian to Palaeozoic Palaeopalynology and Palaeobotany*, Steemans P. and Javaux E. (Eds), *Carnets de Géologie/NoteBooks on Geology*, M02/02, 11-14, Brest, 2005

Papers in press or submitted

- MIKALOFF-FLETCHER, S.E., N. GRUBER, A. R. JACOBSON, S. C. DONEY, S. DUTKIEWICZ, M. FOLLOWS, K. LINDSAY, D. MENEMENLIS, A. MOUCHET AND J. L. SARMIENTO, Robust estimates of anthropogenic carbon uptake, transport and storage by the ocean, *Global Biogeochemical Cycles*
- GÉRARD J.-C., A. SAGLAM, D. GRODENT AND J.T. CLARKE, The ultraviolet Io footprint emission: morphology, time variation and control by Io's location, *J. Geophys. Res. (Space Physics)*

- COUMANS V., J.-C. GÉRARD, B. HUBERT AND M. MEURANT, Global auroral proton precipitation observed by IMAGE-FUV : moon and midnight brightness dependence on solar wind characteristics and IMF orientation, *J. Geophys. Res. (Space Physics)*
- HUBERT B., S.E. MILAN, A. GROCOTT, C. BLOCKX, S. W. H. COWLEY AND J.-C. GÉRARD, Dayside and nightside reconnection rates inferred from IMAGE-FUV and SuperDARN data, *J. Geophys. Res.*
- MELIN, H., S. MILLER, T. STALLARD, C. SMITH AND D. GRODENT, Estimated energy balance in the Jovian upper atmosphere during an auroral heating event, *Icarus*
- GRODENT D., J.C. GÉRARD, J. GUSTIN, B.H. MAUK AND J.E.P. CONNERNEY, Europa's FUV auroral tail on Jupiter, *Geophys. Res. Lett.*
- GODDERIS Y., Y. DONNADIEU, C. DESSERT, B. DUPRE, F. FLUTEAU, L.M. FRANÇOIS, J. MEERT, A. NEDELEC AND G. RAMSTEIN, Coupled modeling of global carbon cycle and climate in the Neoproterozoic: links between Rodinia breakup and major glaciations, *C. R. Geosciences*
- GODDERIS Y., L.M. FRANÇOIS, A. PROBST, J. SCHOTT, D. MONCOULON, D. LABAT AND D. VIVILLE, Modelling weathering processes at the catchment scale with the WITCH numerical model, *Geochim. Cosmochim. Acta*
- UTESCHER T., B. ERDEI, L. FRANÇOIS AND V. MOSBRUGGER, Studies on diversity of plant functional types in the Miocene of Western Eurasia – spatial distribution patterns in the Langhian, *Sarmatian and Tortonian AND their relation to palaeovegetation and palaeoclimate.*
- CHEDDADI R., G. VENDRAMIN, T. LITT, L. FRANÇOIS, M. KAGEYAMA, S. LORENTZ, J.-M. LAURENT, J.-L. DE BEAULIEU, L. SADORI, A. JOST AND D. LUNT, Imprints of glacial refugia in the modern genetic diversity of *Pinus sylvestris*, *Global Ecology and Biogeography*
- FRANÇOIS L., M. GHISLAIN, D. OTTO, A. MICHEELS, Late Miocene vegetation reconstruction with the CARAIB model, *Palaeogeogr., Palaeoclim., Palaeoecol.*
- PROVAN, G., M. LESTER, S. W. H. COWLEY, A. GROCOTT, S.E.MILAN AND B. HUBERT, Modulation of dayside reconnection by solar wind pressure pulses during Northward IMF, *J. Geophys. Res., submitted*
- LAURENT J.-M., L. FRANÇOIS, A. BAR-HEN, L. BEL, R. CHEDDADI, European Bioclimatic Affinity Groups: data-model comparisons, *Submitted to Global Planet. Change (special issue)*

Atmospheric and Solar Spectroscopy, Molecular Spectroscopy

Published papers

- BARRET, B., D. HURTMANS, M.R. CARLEER, M. DE MAZIÈRE, E. MAHIEU AND P.-F. COHEUR, Line narrowing effect on the retrieval of HF and HCl vertical profiles from ground-based FTIR measurements, *J. Quant. Spectrosc. Radiat. Transfer*, 95, 499-519, 2005
- BERNATH, P.F., C.T. MCELROY, M.C. ABRAMS, C.D. BOONE, M. BUTTLER, C. CAMY-PEYRET, M. CARLEER, C. CLERBAUX, P.-F. COHEUR, R. COLIN, P. DECOLA, M. DE MAZIÈRE, J.R. DRUMMOND, D. DUFOUR, W.F.J. EVANS, H. FAST, D. FUSSEN, K. GILBERT, D.E. JENNINGS, E.J. LLEWELLYN, R.P. LOWE, E. MAHIEU, J.C. MCCONNELL, M. MCHUGH, S.D. MCLEOD, R. MICHAUD, C. MIDWINTER, R. NASSAR, F. NICHITIU, C. NOWLAN, C.P. RINSLAND, Y.J. ROCHON, N. ROWLANDS, K. SEMENIUK, P. SIMON, R. SKELTON, J.J. SLOAN, M.-A. SOUCY, K. STRONG, P. TREMBLAY, D. TURNBULL, K.A. WALKER, I. WALKTY, D.A. WARDLE, V. WEHRLE, R. ZANDER AND J. ZOU, Atmospheric Chemistry Experiment (ACE): mission overview, *Geophys. Res. Lett.*, 32, L15S01, doi:10.1029/2005GL022386, 2005
- DE MAZIÈRE, M., C. VIGOUROUX, T. GARDINER, M. COLEMAN, P. WOODS, K. ELLINGSEN, M. GAUSS, I. ISAKSEN, T. BLUMENSTOCK, F. HASE, I. KRAMER, C. CAMY-PEYRET, P. CHELIN, E. MAHIEU, P. DEMOULIN, P. DUCHATELET, J. MELLQVIST, A. STRANDBERG, V. VELAZCO, J. NOTHOLT, R. SUSSMANN, W. STREMMER AND A. ROCKMANN, The exploitation of ground-based Fourier transform infrared observations for the evaluation of tropospheric trends of greenhouse gases over Europe, *Environmental Sciences*, 2 (2-3), 283-293, 2005
- KRIEG J., J. NOTHOLT, E. MAHIEU, C.P. RINSLAND AND R. ZANDER, Sulphur hexafluoride (SF₆): comparison of FTIR-measurements at three sites and determination of its trend in the northern hemisphere, *J. Quant. Spectrosc. Radiat. Transfer*, 92, 383-392, 2005
- MAHIEU E., R. ZANDER, P. DEMOULIN, P. DUCHATELET, C. SERVAIS, C.P. RINSLAND AND M. DE MAZIÈRE, Recent evolution of atmospheric OCS above the Jungfraujoch station: Implications for the stratospheric aerosol layer, *Proceedings of "Atmospheric Spectroscopy Applications, ASA Reims 2005"*, Reims, September 6-8, 2005, 235-238, 2005
- MAHIEU E., R. ZANDER, P. DUCHATELET, J.W. HANNIGAN, M.T. COFFEY, S. MIKUTEIT, F. HASE, T. BLUMENSTOCK, A. WIACEK, K. STRONG, J.R. TAYLOR, R. MITTERMEIER, H. FAST, C.D. BOONE, S.D. MCLEOD, K.A. WALKER, P.F. BERNATH AND C.P. RINSLAND, Comparisons between ACE-FTS and ground-based measurements of stratospheric HCl and ClONO₂ loadings

at northern latitudes, *Geophys. Res. Lett.*, 32, L15S08, doi: 10.1029/2005GL022396, 2005

- MAHIEU E., R. ZANDER, C. SERVAIS, P. DEMOULIN, P. DUCHATELET, M. DE MAZIÈRE AND C.P. RINSLAND, Observations at the Jungfraujoch Station: Long-term Trend Studies and Validation of Space-based Sensors, in Tropospheric Sounding from Space, in *ACCENT-TROPOSAT-2 in 2004-5*, J. Burrows and P. Borrell, Eds., 289-296, 2005
- RINSLAND C.P., C. BOONE, R. NASSAR, K. WALKER, P. BERNATH, E. MAHIEU, R. ZANDER, J.C. MCCONNELL AND L. CHIOU, Trends of HF, HCl, CCl₂F₂, CCl₃F, CHClF₂ (HCFC-22) AND SF₆ in the lower stratosphere from Atmospheric Chemistry Experiment (ACE) and Atmospheric Trace MOlecule Spectroscopy (ATMOS) measurements near 30°N latitude, *Geophys. Res. Lett.*, 32, L16S03, doi:10.1029/2005GL022415, 2005
- RINSLAND C.P., A. GOLDMAN, E. MAHIEU, R. ZANDER, L.S. CHIOU, J.W. HANNIGAN, S.W. WOOD AND J.W. ELKINS, Long-term evolution in the tropospheric concentration of chlorofluorocarbon 12 (CCl₂F₂) derived from high-spectral resolution infrared solar absorption spectra: retrieval and comparison with in situ surface measurements, *J. Quant. Spectrosc. Radiat. Transfer*, 92, 201-209, 2005
- YURGANOV L.N., P. DUCHATELET, A.V. DZHOLA, D.P. EDWARDS, F. HASE, I. KRAMER, E. MAHIEU, J. MELLQVIST, J. NOTHOLT, P.C. NOVELLI, A. ROCKMANN, H.E. SCHEEL, M. SCHNEIDER, A. SCHULZ, A. STRANDBERG, R. SUSSMANN, H. TANIMOTO, V. VELAZCO, J.R. DRUMMOND AND J.C. GILLE, Increased Northern Hemispheric carbon monoxide burden in the troposphere in 2002 and 2003 detected from the ground and from space, *Atmos. Chem. Phys.*, 5, 563-573, 2005
- ZANDER R. AND M. DE MAZIÈRE, Atmospheric Composition Changes: Causes and Processes Involved, in *Belgian Global Change Research 1990-2002: Assessment and Interpretation Report*; G. den Oude and M. Vanderstraeten editors, Depot Nr. D/2004/1191/48, 29-64, 2005
- ZANDER, R., E. MAHIEU, P. DEMOULIN, P. DUCHATELET, C. SERVAIS, G. ROLAND, L. DELBOUILLE, M. DE MAZIÈRE AND C.P. RINSLAND, Evolution of a dozen non-CO₂ greenhouse gases above Central Europe since the mid-1980s, *Environmental Sciences*, 2 (2-3), 295-303, June-September 2005, 2005

Chemical Oceanography

Published papers

- BORGES A.V., B. DELILLE AND M. FRANKIGNOULLE, Budgeting sinks and sources of CO₂ in the coastal ocean: Diversity of ecosystems counts, *Geophys. Res. Lett.*, 32, L14601, doi:10.1029/2005GL023053, 2005

- BORGES A.V., Do we have enough pieces of the jigsaw to integrate CO₂ fluxes in the Coastal Ocean ?, *Estuaries*, 28(1):3-27, 2005
- BORGES A.V., Y.M. KONE, L.-S. SCHIETTECATTE, B. DELILLE, M. FRANKIGNOULLE AND S. BOUILLON, Preliminary results on the biogeochemistry in the Mekong estuary and delta (Vietnam), *Geophys. Res. Abstracts*, 7, 01903, 2005
- BOUILLON S., F. DEHAIRS AND A.V. BORGES, Biogeochemistry of the Tana estuary and delta (northern Kenya), *Geophys. Res. Abstracts*, 7, 01482, 2005
- BOUILLON S., F. DEHAIRS, G. ABRIL AND A.V. BORGES, Distribution and sources of organic carbon in a mangrove-seagrass ecosystem (Gazi Bay, Kenya), *Geophys. Res. Abstracts*, 7, 01904, 2005
- BOZEC Y., H. THOMAS, L.-S. SCHIETTECATTE, A.V. BORGES, K. ELKALAY AND H.J.W. DE BAAR, Processes controlling the seasonal variations of inorganic carbon in the North Sea, *Geophys. Res. Abstracts*, 7, 01954, 2005
- DELILLE B., J. HARLAY, I. ZONDERVAN, S. JACQUET, L. CHOU, R. WOLLAST, R.G.J. BELLERBY, M. FRANKIGNOULLE, A.V. BORGES, U. RIEBESELL AND J.-P. GATTUSO, Response of primary production and calcification to changes of pCO₂ during experimental blooms of the coccolithophorid *Emiliana huxleyi*, *Global Biogeochemical Cycles*, 19, GB2023, doi: 10.1029/2004GB002318, 2005
- DELILLE B., V. SCHOEMANN, C. LANCELOT, D. LANNUZEL, J.T.M. DE JONG, B. TILBROOK, D. DELILLE AND A.V. BORGES, What controls pCO₂ dynamics in Antarctic sea ice and related air-ice CO₂ fluxes ?, *Annals of Glaciology*, 44, 44A138, 2005
- ENGEL A., I. ZONDERVAN, K. AERTS, L. BEAUFORT, A. BENTHIEN, L. CHOU, B. DELILLE, J.-P. GATTUSO, J. HARLAY, C. HEEMANN, L. HOFFMANN, S. JACQUET, J. NEJSTGAARD, M.-D. PIZAY, E. ROCHELLE-NEWALL, U. SCHNEIDER, A. TERBRUEGGEN A. AND U. RIEBESELL, Testing the direct effect of CO₂ concentration on a bloom of the coccolithophorid *Emiliana huxleyi* in mesocosm experiments, *Limnology and Oceanography*, 50(2): 493-507, 2005
- GAZEAU F., A.V. BORGES, C. BARRÓN, C.M. DUARTE, N. IVERSEN, J.J. MIDDELBURG, B. DELILLE, M.-D. PIZAY, M. FRANKIGNOULLE AND J.-P. GATTUSO, Net ecosystem metabolism in a micro-tidal estuary (Randers Fjord, Denmark): evaluation of methods, *Marine Ecology Progress Series*, 301, 23-41, 2005
- GAZEAU F., C. M. DUARTE, J.- P. GATTUSO, C. BARRÓN, N. NAVARRO, S. RUÍZ, Y.T. PRAIRIE, M. CALLEJA, B. DELILLE, M. FRANKIGNOULLE AND A.V. BORGES, Whole-system metabolism and CO₂ fluxes in a Mediterranean Bay dominated by seagrass beds (Palma Bay, NW Mediterranean), *Biogeosciences*, 2(1): 43-60, 2005
- GAZEAU F., J.-P. GATTUSO, J.J. MIDDELBURG, N. BRION, L.-S. SCHIETTECATTE, M. FRANKIGNOULLE AND A.V. BORGES, Planktonic

and whole system metabolism in a nutrient-rich estuary (the Scheldt estuary), *Estuaries*, 28(6), 868-883, 2005

- JACQUET S.H.M., F. DEHAIRS, D.B. CARDINAL, J. NAVEZ AND B. DELILLE, Barium distribution controlled by hydrological and biogeochemical processes: results from a Southern Ocean Frontal System [Crozet-Kerguelen Basin], *Marine Chemistry*, 95 (3-4): 149-162, 2005
- RANGAMA Y., J. BOUTIN, J. ETCHETO, L. MERLIVAT, T. TAKAHASHI, B. DELILLE, M. FRANKIGNOULLE AND D.C.E. BAKKER, Variability of net air-sea CO₂ flux inferred from in situ and satellite measurements in the Southern Ocean south of Tasmania and New Zealand, *J. Geophys. Res.*, 110(C9), C09005, doi: 10.1029/2004JC002619, 2005
- ROCHELLE-NEWALL E. J., C. BARRON, A. V. BORGES, C. M. DUARTE, M. FRANKIGNOULLE, F. GAZEAU, J.J. MIDDELBURG, M.-D. PIZAY, J. THIOULOUSE AND J.-P. GATTUSO, Community metabolism in three contrasting coastal Ecosystems, *Geophys. Res. Abstracts*, 7, 09330, 2005
- SCHIETTECATTE L.-S., F. GAZEAU, C. VAN DER ZEE, M. FRANKIGNOULLE AND A.V. BORGES, Four years of dissolved inorganic carbon dynamics along the Belgian coast, *Geophys. Res. Abstracts*, 7, 07276, 2005
- THOMAS H., Y. BOZEC, H.J.W. DE BAAR, K. ELKALAY, M. FRANKIGNOULLE, L.-S. SCHIETTECATTE, G. KATTNER AND A.V. BORGES, The Carbon budget of the North Sea, *Biogeosciences*, 2(1): 87-96, 2005
- THOMAS H., Y. BOZEC, K. ELKALAY, H.J.W. DE BAAR, A.V. BORGES AND L.-S. SCHIETTECATTE, Controls of the surface water partial pressure of CO₂ in the North Sea, *Biogeosciences*, 2 (4), 323-334, 2005
- THOMAS H., Y. BOZEC, K. ELKALAY, R. HEERDINK, H.J.W. DEBAR, L.-S. SCHIETTECATTE AND A.V. BORGES, Variability of the CO₂ air-sea fluxes in the North Sea, *Geophys. Res. Abstracts*, 7, 05636, 2005
- TISON, J.-L, T. WORBY, B. DELILLE, V. SCHOEMANN, J. DE JONG, D. LANNUZEL AND C. HAAS, Thermodynamic evolution of summer first year sea ice properties at ISPOL (Western Weddell Sea, Antarctica): implications for biological activity and air-ice-sea gas exchanges, *Annals of Glaciology*, 44, 44A133, 2005
- TISON, J.-L., T. MOCK, D. THOMAS, A. KRELL, S. PAPADIMITRIOU, V. VERBEKE, B. DELILLE AND G. DIECKMANN, A Comparative Study of O₂ Measurements in Experimental (Interice II) and Natural (ISPOL, Western Weddell Sea, Antarctica) First Year Sea Ice, *Annals of Glaciology*, 44, 44A175, 2005

Papers in press or submitted

- SCHIETTECATTE L.-S., H. THOMAS, Y. BOZEC AND A.V. BORGES, High temporal coverage of carbon dioxide measurements in the Southern Bight of the North Sea, *Marine Chemistry*

- BOUILLON B., F. DEHAIRS, M. KORNTHEUER, L.-S. SCHIETTECATTE AND A.V. BORGES, Sources and cycling of organic and inorganic carbon in the Tana estuary and delta (northern Kenya), *Limnology and Oceanography*
- ROCHELLE-NEWALL E.J., C. WINTER, C. BARRÓN, A.V. BORGES, C.M. DUARTE, M. ELLIOTT, M. FRANKIGNOULLE, F. GAZEAU, J. MIDDELBURG, M.-D. PIZAY AND J.-P. GATTUSO, An artificial neural network analysis of factors controlling ecosystem metabolism in the coastal ocean, *Ecological Applications*
- SCHIETTECATTE L.-S., F. GAZEAU, C. VAN DER ZEE, N. BRION AND A.V. BORGES, Time series of the partial pressure of carbon dioxide (2001-2004) and net ecosystem production off the Belgian coast, *G3*
- KONÉ Y. J.-M. AND A. V. BORGES, Dissolved inorganic carbon dynamics during the dry season in the waters surrounding forested mangroves of the Ca Mau Province (Vietnam), *Aquatic Geochemistry*
- BOZEC Y., H. THOMAS, L.-S. SCHIETTECATTE, A.V. BORGES, K. ELKALAY AND H.J.W. DE BAAR, Assessment of the processes controlling the seasonal variations of dissolved inorganic carbon in the North Sea, *Limnology and Oceanography*
- ELKALAY K., H. THOMAS, Y. BOZEC, A.V. BORGES, L.-S. SCHIETTECATTE, R. HEERDINK, P. RUARDIJ AND H. DE BAAR, Biogeochemical 1D ERSEM ecosystem model applied to recent carbon dioxide and nutrient data in the North Sea, *Ecological Modelling*
- BARRÓN C., C.M. DUARTE, M. FRANKIGNOULLE AND A. V. BORGES, Organic carbon metabolism and carbonate dynamics in a Mediterranean seagrass (*Posidonia oceanica*) meadow, *Estuaries*
- BORGES A.V., L.-S. SCHIETTECATTE, G. ABRIL, B. DELILLE AND F. GAZEAU, Carbon dioxide in European coastal waters, Estuarine, Coastal and Shelf Science, *Estuarine, Coastal and Shelf Science*

Irreversible thermomechanics

Published papers

- DONDLINGER M., J. MARGERIT AND P.C. DAUBY, Weakly nonlinear study of Marangoni instabilities in an evaporating liquid layer, *J. Colloid Interface Sci.*, 283, 522-532, 2005
- MARGERIT J., M. DONDLINGER AND P.C. DAUBY, Improved 1.5-sided model for the weakly nonlinear study of Bénard-Marangoni instabilities in an evaporating liquid layer, *J. Colloid Interface Sci.*, 290, 220-230, 2005

- OZEN O., E. THEISEN, D. JOHNSON, P.C. DAUBY AND R. NARAYANAN, Experiments on the role of gas height in the Rayleigh-Marangoni instability problem, *J. Colloid and Interf. Sci.* 289: 271-275, 2005
- GRMELA M., G. LEBON, P.C. DAUBY AND M. BOUSMINA, Ballistic-diffusive heat conduction at nano-scales : GENERIC approach, *Phys. Letters A* 339: 237-245, 2005
- JOU D., J. CASAS-VAZQUEZ, G. LEBON AND M. GRMELA, A phenomenological scaling approach for heat transport in nano-systems, *Appl. Math. Letters* 18, 963, 2005
- LEBON G., A. BALTOV AND M. GRMELA, A thermodynamic derivation of Drucker's work hardening relation in plasticity, *J. Theor and Appl. Mech*, 35, 61, 2005
- LEBON G., P.C. DAUBY AND M. GRMELA, On an extended thermodynamic description of transient heat conduction in nano structures, *Proceed. of 2nd IEEEES Conf.*, 47, Kos-Greece, 3-7 July, 2005
- LEBON G., TH. DESAIVE AND P. COLINET, Thermo-diffusion revisited: a comparative approach between EIT and GENERIC, *Journal of Non-Equilibrium Thermodynamics*, 29, n°4, 405-415, 2005
- HENNENBERG M., B. WEYSSOW, S. SLAVTCHEV, V. ALEKSANDROV AND TH. DESAIVE, Rayleigh-Marangoni-Benard instability of a Ferrofluid Layer in a Vertical Magnetic Field, *Journal of Magnetism and Magnetic Material*, 289, 268-271, 2005

Papers in press or submitted

- DAUBY P.C., TH. DESAIVE, H. CROISIER AND PH. KOLH, Standing waves in the FitzHugh-Nagumo model of cardiac electrical activity, *Phys. Rev. E.* 73, 021908
- LEBON G., TH. DESAIVE AND P.C. DAUBY, An unified extended thermodynamic description of diffusion, thermo-diffusion, suspensions and porous media, *Journal Appl. Mech*, 73, 16-20
- LAMBERMONT B., P. DELANAYE, J-M. DOGNÉ, A. GHUYSEN, N. JANSSEN, B. DUBOIS, TH. DESAIVE, PH. KOLH, V. D'ORIO AND J-M KRZESINSKI, Large pore membrane hemofiltration increases cytokine clearance and improves right ventricular-vascular coupling during endotoxic shock in pigs, *Artificial Organs*
- LANOYE L., P. SEGERS, TH. DESAIVE, S. ROLIN, V. TCHANA-SATO, J-M DOGNE, A. GHUYSEN, B. LAMBERMONT, J. HANSON, V. D'ORIO AND PH. KOLH, Assessment of Cardiovascular Hemodynamics in a Pig Model of Ischemia-Reperfusion, *submitted*

Physical oceanography and interdisciplinary modeling of marine systems

Published papers

- M. RIXEN, J.-M. BECKERS, S. LEVITUS, J. ANTONOV, T. BOYER, C. MAILLARD, M. FICHAUT, E. BALOPOULOS, S. IONA, H. DOOLEY, M.-J. GARCIA, B. MANCA, A. GIORGETTI, G. MANZELLA, N. MIKHAILOV, N. PINARDI, M. ZAVATARELLI AND THE MEDAR CONSORTIUM, He Western Mediterranean Deep Water: a proxy for global climate change, *Geophys. Res. Lett.*, 2005
- STANICHNY S., V. TIGNY, R. STANICHNAYA AND S. DJENIDI, Wind driven upwelling along the African coast of the Gibraltar Strait, *Geophys. Res. Lett.*, 32, L04604, doi:10.1029/2004GL021760, 2005
- STANICHNY S. AND S. DJENIDI, Processes in the Gibraltar Strait area, *Final report, OSTC, 35pp*, 2005

Papers in press or submitted

- BARTH A., A. ALVERA-AZCARATE, J.-M. BECKERS AND M. RIXEN, Coupling a two-way nested primitive equation model and a statistical SST predictor of the Ligurian Sea via data assimilation, *Ocean Modelling*
- RAICK C., J.-M. BECKERS, K. SOETAERT AND M. GREGOIRE, Principal Component Analysis be used to predict the dynamics of a strongly non-linear marine biogeochemical model?, *Ecological Modelling*
- TIGNY V., A. OZER, G. DE FALCO, M. BAROLI AND S. DJENIDI, Relationship between the evolution of the shoreline and the Posidonia oceanica meadow limit: application to a Sardinian coastal zone, *Journal of Coastal*
- SKLIRIS N. AND S. DJENIDI, Plankton dynamics controlled by hydrodynamic processes near a submarine canyon off NW Corsican coast: a numerical modelling study, *Continental Shelf Research*