

Raphaël Gavazzi

OFFICE ADDRESS

Observatoire Midi-Pyrénées
14 avenue Edouard Belin
F-31400 Toulouse
France

Phone: +33 5 61 33 28 21

Fax: +33 5 61 33 28 40

Mobile: +33 6 64 21 35 08

Email: raphael.gavazzi@ast.obs-mip.fr

URL: <http://www2.iap.fr/users/gavazzi/>

PERMANENT ADDRESS

21 rue Lafayette
F-31000 Toulouse
France

DATE OF BIRTH: January 18th, 1978.

CITIZENSHIP: French.

PLACE OF BIRTH: Nice, France

ACADEMIC POSITION:

2004 – **Postdoctoral fellowship**, on CFHTLS deep survey at LATT, Observatoire Midi-Pyrénées, Toulouse, France.

EDUCATION:

2001 – 2004 **PhD in Astrophysics**, at Institut d'Astrophysique de Paris (IAP), France.

Thesis title: «*Studies of dark matter halos, through their gravitational lensing properties, in the regime of strong and weak distortions*».

Thesis supervisor: Bernard Fort, IAP.

Completion date: October, 27th, 2004.

2000 – 2001 **M.A. (DEA) in Astrophysics** (*High honours, ranked 1st*).
Université Paris VII- Observatoire de Paris-Meudon, France.

1996 – 2000 **B.A. in Fundamental Physics** (*High honours, ranked 1st*).
Université Montpellier II, France.

RESEARCH INTERESTS:

Cosmology, Gravitational Lensing (strong and weak), Large Scale Structure on the Universe, Dynamics of gravitating systems.

SCHOLARSHIPS/FELLOWSHIPS:

Research fellowship (three years) from the French Ministère de l'Éducation Nationale, de la Recherche et de la Technologie, 2001-2004.

Postdoctoral Fellowship from the Centre National de la Recherche Scientifique (CNRS), 2004-2006

TEACHING EXPERIENCE:

Optics and Electromagnetism, teaching assistant. *Université Versailles-Saint Quentin. (Spring 2004).*

Lectures on Strong lensing inversion techniques. *Shanghai Observatory. (September 2005).*

RELEVANT POSITIONS:

Visiting fellow, Shanghai Observatory. Collaboration with Prof. C. Shu on Strong Lensing inversion techniques. (September, 2005).

Invited fellow, Oxford Astrophysics Department, University of Oxford, (grant from the Leverhulme trust). Collaboration with Prof. J Silk and Dr. H Mathis on simulations of weak lensing by cosmological Large-Scale Structure. (April-June, 2005).

Visiting scholar, Department of Astrophysics, Universidad Católica de Chile. Collaboration with Dr. R Athreya on weak lensing mass reconstructions (October- November, 2001).

Research Internship, GRAAL, Montpellier, France. Study of the circumstellar shell of the post-AGB QY- Sge star, under the supervision of Dr. N Mauron (Spring 2000).

PUBLICATIONS:

“Probing dark matter caustics with weak lensing”. R. Gavazzi, R. Mohayaee & B. Fort 2005, *A&A*, in press, preprint astro-ph/0506061.

“Projection effects in cluster mass estimates : the case of MS2137”. R. Gavazzi 2005, *A&A*, in press, preprint astro-ph/0503696.

“Mass and light in the supercluster of galaxies MS0302+17”. R. Gavazzi, Y. Mellier, B. Fort, J.-C. Cuillandre & M. Dantel-Fort 2004, *A&A*, 422, 407.

“A Radial Mass profile for the lensing galaxies cluster MS2137”. R. Gavazzi, M. Dantel-Fort, B. Fort, Y. Mellier & R. Pelló 2003, *A&A*, 403, 11.

“Constraints on MOND with the lensing galaxies cluster MS2137”. R. Gavazzi 2002, *New Astronomy Review*, 46, 783.

WORK IN PROGRESS:

"Topology & non-gaussianity of weak lensing density fields ". R. Gavazzi, H. Mathis & J. Silk
2005, in preparation

"Weak lensing survey of Galaxies Clusters in the CFHTLS". R. Gavazzi, C. Marmo, Y. Mellier, G.
Soucail 2005, in preparation

CONFERENCES AND WORKSHOP PARTICIPATION:

"MOND and modified gravity", IAP workshop, Paris, France, October 2001
"Constraints on MOND with the lensing galaxies cluster MS2137".

"Gravitational LENSES", Ringberg Castle, Germany, July 2002
"MS2137-23 cluster of galaxies combined strong-weak lensing analysis".

"Gravitational lensing, a unique tool for cosmology", Aussois, France, January 2003
No oral contribution.

"French national prospective for the CFHTLS", IAP Paris, France, January 2004
"Mass and light in the supercluster of galaxies MS0302+17".

"Impact of gravitational lensing on cosmology", IAU Symp225, Lausanne, July 2004.
"Lensing and stellar dynamics in galaxies clusters".

"Mass profiles and shapes of cosmological Structures", 21st IAP Colloquim, Paris, 4-9 July 2005.
"Projection effects in galaxies clusters: the case of MS2137-23".

INFORMATICS, LANGUAGE PROGRAMMING:

Linux Operating Systems (high level).

Fortran95, awk, shell scripts, IDL, C, perl (high level).

parallelization with openmp/MPI directives (good level)

Mathematica (good level).

Good knowledge of imcat, SExtractor, lenstool, and lensmodel facilities
and development of a personal lensing (strong&weak) toolkit coupled with original
stellar dynamics analysis capabilities.

LANGUAGES:

French (Mother tongue).

English (Advanced level, read, written and spoken).

Italian (Intermediate level, read, written and spoken).

Spanish (Intermediate level, read, written and spoken).