
Dr Hervé Dole: Curriculum Vitæ

Tenured Assistant Professor (Maître de Conférences) – Infrared Galaxies and their Evolution –

Personal Data:

Age: 36 years old (Born: July 1970)

Citizenship: French

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Positions:

- *Since September 2003*: Tenured Assistant Professor at IAS & Université Paris Sud 11.
 - *November 2000 to September 2003*: Research Associate at the University of Arizona, Tucson, USA.
 - *October 1997 to October 2000*: PhD Thesis and Teaching Assistant - IAS & Université Paris Sud 11.
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Research Activities:

- **41 refereed published articles, of which 5 in first author, and 1 review.**
- 9 conference proceedings as 1st author, of which 2 invitations and 1 review. 36 papers in total.
- 10 technical reports, of which 9 for MIPS.
- 30 talks in meetings, of which 3 invitations and 2 reviews.
- 45 colloquia/seminars given since 1997.
- **Cosmic Infrared Background**: Resolution of the far-IR background with *Spitzer*, using a stacking analysis.
- **Infrared Galaxies**: characterization of their physical properties, among which SED, stellar masses, contribution to the CIB. *Co-direction of 2 thesis and 2 CNES post-docs.*
- **Spitzer Programs**: PI of a GO: characterizing far-IR galaxies. **Co-I** of 7 program on IR galaxies at low to high redshift, among which one Legacy and one Large program. Co-I of the SWIRE Legacy.
- **Scientific management of the Spitzer MIPS GTO Cosmological Surveys**. Scientific and observation preparation of the surveys. Characterization of the statistical properties of IR galaxies: counts, evolution, SED. PI of the first Spitzer deep survey (ERO).
- **Instrumental Characterisation of IR space instruments**: MIPS on *Spitzer* and ISOPHOT on ISO.
- **Modelization of IR Galaxy Evolution**. Phenomenological model reproducing the observables between 6 μm and 3 mm: counts, $n(z)$, CIB SED and fluctuations.
- **Simulation of the IR & submm sky**. Used for *Spitzer*.
- **Galaxy Evolution w/ ISO**. Data reduction & analysis of the 170 μm FIRBACK deep survey. Characterization of the evolution w/ counts.
- **Multi-wavelength follow-up of IR sources**, in the radio, submm, mm.

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Projects:

- **Scientific exploitation of Spitzer data.** galaxy evolution characterization: complete SEDs, dust, star formation vs AGN, LFs, clustering, CIB fluctuations. Stacking, follow-up observations.
 - **IR Galaxy Evolution w/ Planck & Herschel.** Scientific Preparation. Simulations. Statistical analysis: background fluctuations, rare objects (Planck); evolution at higher-z (Herschel+Planck).
 - **Galaxies w/ APEX, ALMA, JWST MIRI, SAFIR** at high redshift in the IR and submm.
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Teaching Activities:

- Teaching duty: 192h/yr (equivalent of about 7h/week).
 - Construction and operation of **10 radiotelescopes observing at 10 GHz (RAMEAU)** for experimental astrophysics. Licence and Master. Responsible of the **optical observatory (35cm)**: CCD imaging.
 - **Master 2: Astrophysics:** observations and image processing; **Astroparticles:** Cosmology lecture; space data analysis.
 - **Master 1:** CCD imaging; Optics.
 - **Licence 3:** Quantum Mechanics.
 - **Licence 2:** Observationnal Cosmology. Experimental Astrophysics w/ RAMEAU.
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Public & Outreach Activities:

- **Conferences.** ~50 public talks in universities, schools, associations (France & USA).
 - **Press.** 29 articles; Press Releases: 2 ESA, 1 NASA, 1 CNRS.
 - **TV & Radio.** 2002: "Au coeur de la Science" (TV). 2006: RadioHop.
 - **Associations & Schools.** Aphélie, AAV, ALCOR (France), TAAA, Pr. & Family ASTRO (USA).
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Cursus:

- **1997-2000: PhD "Astrophysics and Space Science", Université Paris Sud 11,** Institut d'Astrophysique Spatiale, Orsay, France: "*Evolution of IR Galaxies: from ISO cosmological observations to a IR and submm modelization*". Supervisors: Richard Gispert & Jean-Loup Puget. Defense: Oct 23rd, 2000. Jury members: G. Pineau des Forêts; C. Beichman; F. Hammer; F.-X. Désert; B. Guiderdoni; J.-L. Puget.
 - **1996-1997:** National Service.
 - **1995-1996: Master in Astrophysics.** Université Paris VI, *major*.
 - **1996:** Master's Project at Paris-Meudon Observatory w/ L. Bottinelli & L. Gouguenheim: "*Elaboration of an extragalactic distance scale for spirals using the 21cm line*" (1 publication).
 - **summers 94, 95 & 96:** Projects at Paris-Meudon observatory ("*Extragalactic radio sources and 2-fluid model for jets*" w/ H. Sol) and Pic-du-Midi Observatory ("*Photopolarimetry of the Vega disk*" w/ N. Mauron) (2 publications).
 - **1993-1995: 3rd and 4th year in Fundamental Physics,** Université Paris Sud 11.
 - **1992-1993:** 1st year of engineer's school, ENSPM Marseille.
 - **1990-1992:** 1st and 2nd year, Université Paris Sud 11.
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List of Selected Publications

1 Refereed Published Articles

1.1 Articles in First Author

1. *The Cosmic Infrared Background Resolved by Spitzer. Contributions of Mid-Infrared Galaxies to the Far-Infrared Background.* **H. Dole**, G. Lagache, J.-L. Puget, K. I. Caputi, N. Fernández-Conde, E. Le Floc'h, C. Papovich, P. G. Pérez-González, G. H. Rieke, M. Blaylock, 2006, *A&A*, 451, 417.
2. *Far Infrared Source Counts at 70 and 160 microns in Spitzer Deep Surveys* **H. Dole**, E. Le Floc'h, P. G. Perez-Gonzalez, C. Papovich, E. Egami, G. Lagache, A. Alonso-Herrero, C. W. Engelbracht, K. D. Gordon, D. C. Hines, O. Krause, K. A. Misselt, J. E. Morrison, M. J. Rieke, J. R. Rigby, E. T. Young, L. Bai, M. Blaylock, G. Neugebauer, C. A. Beichman, D. T. Frayer, J. R. Mould, P. L. Richards, 2004, *ApJS*, 154, 87.
3. *Confusion of Extragalactic Sources in the Mid and Far Infrared: Spitzer and Beyond* **H. Dole**, G. H. Rieke, G. Lagache, J.-L. Puget, et al. [and 22 co-authors], 2004, *ApJS*, 154, 93.
4. *Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for SIRTf (MIPS)* **H. Dole**, G. Lagache, J.-L. Puget, 2003, *ApJ*, 585, 617
5. *FIRBACK: III. Source Counts and Cosmological Implications of the 170 μm ISO Deep Survey* **H. Dole**, R. Gispert, G. Lagache, J.-L. Puget, F. R. Bouchet, C. Cesarsky, P. Ciliegi, D. L. Clements, M. Dennefeld, F.-X. Désert, D. Elbaz, A. Franceschini, B. Guiderdoni, M. Harwit, D. Lemke, A. F. M. Moorwood, S. Oliver, W. T. Reach, M. Rowan-Robinson, M. Stickel, 2001, *A&A*, 372, 364

1.2 Other Significant Articles

6. *The role of the LIRG and ULIRG phases in the evolution of Ks-selected galaxies*
K. I. Caputi, **H. Dole**, G. Lagache, G., R. J. McLure, R. J., J. S. Dunlop, J.-L. Puget, E. Le Floc'h, P. G. Perez-Gonzalez, 2006, *A&A*, 454, 143
7. *The 1-1000 μm spectral energy distributions of far-infrared galaxies*
A. Sajina, D. Scott, M. Dennefeld, **H. Dole**, M. Lacy, G. Lagache, 2006, *MNRAS*, 369, 939
8. *The ISO 170 μm luminosity function of galaxies* T.T. Takeuchi, T. T. Ishii, **H. Dole**, M. Dennefeld, G. Lagache, J.-L. Puget, 2006, *A&A*, 448, 525
9. *Linking Stellar Mass and Star Formation in Spitzer MIPS 24 μm Galaxies* Caputi, K. I., **Dole, H.**, Lagache, G., McLure, R. J., Puget, J.-L., Rieke, G. H., Dunlop, J. S., Le Floc'h, E., Papovich, C., Pérez-González, P. G., 2006, *ApJ*, 637, 727
10. *Infrared Luminosity Functions from the Chandra Deep Field-South: The Spitzer View on the History of Dusty Star Formation at $0 < z < 1$* Le Floc'h, Emeric; Papovich, Casey; **Dole, Hervé**; Bell, Eric F.; Lagache, Guilaine; Rieke, George H.; Egami, Eiichi; [and 10 co-authors] 2005, *ApJ*, 632, 169
11. *DUSTY INFRARED GALAXIES: Sources of the Cosmic Infrared Background* Lagache, Guilaine; Puget, Jean-Loup; **Dole, Hervé**, 2005, *Ann. Rev. Astron. Astrop.*, 43, 727
12. *Observational evidence for the presence of PAHs in distant Luminous Infrared Galaxies using ISO and Spitzer* Elbaz, D.; Le Floc'h, E.; **Dole, H.**; Marcillac, D., 2005, *A&A*, 434, 1

13. *The 24 μm Source Counts in Deep Spitzer Surveys* C. Papovich, **H. Dole**, E. Egami et al. [and 10 co-authors], 2004, ApJS, 154, 70.
14. *Spitzer Observations of the SCUBA/VLA Sources in the Lockman Hole: Star Formation History of Infrared Luminous Galaxies* E. Egami, **H. Dole**, J. Huang et al. [and 24 co-authors], 2004, ApJS, 154, 130.
15. *PAH contribution to the infrared output energy of the Universe at $z \sim 2$* G. Lagache, **H. Dole**, J-L. Puget, P. G. Perez-Gonzalez, E. Le Floc'h, G. H. Rieke, [and 7 co-authors], 2004, ApJS, 154, 112.
16. *Modelling the infrared galaxy evolution using a phenomenological approach* G. Lagache, **H. Dole**, J-L. Puget, 2003, MNRAS, 338, 555
17. *FIRBACK II. Data Processing and Calibration of the 170 μm ISO Cosmological Deep Survey* G. Lagache & **H. Dole**, 2001, A&A, 372, 702

1.3 Selection of Other Articles

18. *Spitzer 70 and 160 μm Observations of the Extragalactic First Look Survey* Frayer, D. T.; Fadda, D.; Yan, L.; Marleau, F. R.; Choi, P. I.; Helou, G.; Soifer, B. T.; Appleton, P. N.; Armus, L.; Beck, R.; **Dole, H.**; Engelbracht, C. W.; Fang, F.; Gordon, K. D.; [and 22 co-authors], 2006, AJ, 131, 250
19. *Spitzer View on the Evolution of Star-forming Galaxies from $z=0$ to $z\sim 3$* Pérez-González, Pablo G.; Rieke, George H.; Egami, Eiichi; Alonso-Herrero, Almudena; **Dole, Hervé**; Papovich, Casey; Blaylock, Myra; Jones, Jessica; Rieke, Marcia; [and 5 co-authors], 2005, ApJ, 630, 82
20. *FIRBACK. IV. Towards the nature of the 170 μm source population* Dennefeld, M.; Lagache, G.; Mei, S.; Ciliegi, P.; **Dole, H.**; Mann, R. G.; Taylor, E. L.; Vaccari, M., 2005, A&A, 440, 5
21. *Properties of FIRBACK-ELAIS 175- μm sources in the ELAIS N2 region* Taylor, E. L.; Mann, R. G.; Efstathiou, A. N.; Babbedge, T. S. R.; Rowan-Robinson, M.; Lagache, G.; Lawrence, A.; Mei, S.; Vaccari, M.; Heraudeau, Ph.; Oliver, S. J.; Dennefeld, M.; Perez-Fournon, I.; Serjeant, S.; Gonzalez-Solares, E.; Puget, J.-L.; **Dole, H.**; Lari, C., 2005, MNRAS, 361, 1352
22. *Reduction Algorithms for the Multiband Imaging Photometer for Spitzer* Gordon, Karl D.; Rieke, George H.; Engelbracht, Charles W.; Muzerolle, James; Stansberry, John A.; Misselt, Karl A.; Morrison, Jane E.; Cadien, James; Young, Erick T.; **Dole, Hervé**; Kelly, Douglas M.; Alonso-Herrero, Almudena; Egami, Eiichi; Su, Kate Y. L.; Papovich, Casey; [and 15 co-authors], 2005, PASP, 117, 503
23. *Spectral Energy Distribution and Luminosities of Galaxies and Active Galactic Nuclei in the Spitzer Wide Area Infrared Extragalactic (SWIRE) Legacy Survey* M. Rowan-Robinson, T. Babbedge, J. Surace, D. Shupe, F. Fang, C. Lonsdale, G. Smith, M. Polletta, B. Siana, E. Gonzalez-Solares, K. Xu, F. Owen, P. Davoodi, **H. Dole**, et al., 2005, AJ, 129, 1183
24. *Spitzer and Hubble Space Telescope Constraints on the Physical Properties of the $z \sim 7$ Galaxy Strongly Lensed by A2218* E. Egami, J-P. Kneib, G. H. Rieke, R. S. Ellis, J. Richard, J. Rigby, C. Papovich, D. Starck, M. R. Santos, J-S. Huang, **H. Dole**, et al., 2005, ApJ, 618, L5
25. *Identification of Luminous Infrared Galaxies at $1 < z < 2.5$* E Le Floc'h, P. G. Pérez-González, G. H. Rieke, C. Papovich, J-S. Huang, P. Barmby, **H. Dole**, et al., 2004, ApJ, 154, 170
26. *The Nature of Luminous X-Ray Sources with Mid-Infrared Counterparts* A. Alonso-Herrero, P. G. Pérez-González, J. Rigby, G. H. Rieke, E. Le Floc'h, P. Barmby, M. J. Page, C. Papovich, **H. Dole**, et al. [and 22 co-authors], 2004, ApJ, 154, 155

27. *Spitzer Observations of MAMBO Galaxies: Weeding Out Active Nuclei in Starbursting Protoellipticals* R. J. Ivison, T. R. Greve, S. Serjeant, F. Bertoldi, E. Egami, A. M. J. Mortier, A. Alonso-Herrero, P. Barmby, L. Bei, **H. Dole**, et al. [and 19 co-authors], 2004, *ApJ*, 154, 118
28. *Submillimeter Detections of Spitzer Space Telescope Galaxy Populations* S. Serjeant, A. M. J. Mortier, R. J. Ivison, E. Egami, G. H. Rieke, S. P. Willner, D. Rigopoulou, A. Alonso-Herrero, P. Barmby, L. Bei, **H. Dole**, et al. [and 15 co-authors], 2004, *ApJ*, 154, 118
29. *First Insights into the Spitzer Wide-Area Infrared Extragalactic Legacy Survey (SWIRE) Galaxy Populations* C. J. Lonsdale, M. Polleta, J. Surace, D. Shupe, F. Fang, K. C. Xu, H. E. Smith, B. Siana, M. Rowan-Robinson, T. Babbege, S. Oliver, F. Pozzi, P. Davoodi, F. Owen, D. Padgett, D. Frayer, t. Jarrett, F. Masci, J. O'Linger, T. Conrow, D. Farrah, G. Morrison, N. Gautier, A. Franceshini, S. Berta, I. Perez-Fournon, E. Hatziminaoglou, A. Afonso-Luis, **H. Dole**, G. Stacey, S. Serjeant, M. Pierre, M. Griffin, R. Puetter, 2004, *ApJ*, 154, 54
30. *Infrared Array Camera (IRAC) Imaging of the Lockman Hole* J-S. Huang, P. Barmby, G. G. Fazio, S. P. Willner, G. Wilson, D. Rigopoulou, A. Alonso-Herrero, **H. Dole**, et al. [and 12 co-authors], 2004, *ApJ*, 154, 44
31. *The Multiband Imaging Photometer for Spitzer (MIPS)* G. H. Rieke, E. T. Young, C. W. Engelbracht, D. M. Kelly, F. J. Low, E. E. Haller, J. W. Beeman, K. D. Gordon, J. A. Stansberry, K. A. Misselt, J. Cadien, J. E. Morrison, G. Rivlis, W. B. Latter, A. Noriega-Crespo, D. L. Padgett, K. R. Stapelfeld, D. C. Hines, E. Egami, J. Muzerolle, A. Alonso-Herrero, M. Blaylock, **H. Dole**, [and 20 co-authors], 2004, *ApJ*, 154, 25
32. *Spectroscopic Follow-up of FIRBACK-South Bright Galaxies* J. Patris, M. Dennefeld, G. Lagache, **H. Dole**, 2003, *A&A*, 412, 349
33. *SWIRE: The SIRTf Wide-area InfraRed Extragalactic Survey* C. Lonsdale, H. Smith, M. Rowan-Robinson, J. Surace, D. Shupe, K. Xu, S. Oliver, D. Padgett, F. Fang, T. Conrow, A. Franceschini, N. Gautier, M. Griffin, P. Hacking, F. Masci, G. Morrison, J. O'Linger, F. Owen, I. Perez-Fournon, M. Pierre, R. Puetter, G. Stacey, S. Castro, M. Del Carmen Polletta, D. Farrah, D. Frayer, B. Siana, T. Babbege, S. Dye, M. Fox, E. Gonzales-Solares, M. Salaman, S. Berta, J. Condon, **H. Dole**, S. Serjeant, M. Werner, 2003, *PASP*, 115, 897
34. *Sub-mm and Near-IR Observations of galaxies selected at 170 μm* A. Sajina, C. Borys, S. Chapman, **H. Dole**, M. Halpern, G. Lagache, J-L. Puget, D. Scott, 2003, *MNRAS*, 343, 1365
35. *First detections of FIRBACK sources with SCUBA* D. Scott, G. Lagache, C. Borys, S.C. Chapman, M. Halpern, A. Sajina, P. Ciliegi, D. L. Clements, **H. Dole**, S. Oliver, J-L. Puget, W. T. Reach, M. Rowan-Robinson, 2000, *A&A*, 357, L5
36. *FIRBACK: I. A deep survey at 175 μm with ISO preliminary results*, J.L. Puget, G. Lagache, D. Clements, W.T. Reach, H. Aussel, F. Bouchet, C. Cesarsky, F.X. Désert, **H. Dole**, D. Elbaz, A. Franceschini, B. Guiderdoni, A. Moorwood, 1999, *A&A* 345, 29

2 Conferences Proceedings

2.1 Invited Papers

1. *ISO and the Cosmic Infrared Background*

H. Dole, Invited Review Talk in "Exploiting the ISO Data Archive - Infrared Astronomy in the Internet Age", (Sigüenza, Spain, 24-27 June 2002), ESA SP-511, 2003, Eds C. Gry et al. (astro-ph/0211310)

2. *FIRBACK source counts and cosmological implications*
H. Dole, R. Gispert, G. Lagache et al., in “ISO Surveys of a Dusty Universe”, (Ringberg, Germany, 8-12 Nov 1999) Springer Lectures Notes, 2000, #548, Eds D. Lemke, M. Stickel, K. Wilke (astro-ph/0002283)

2.2 Selection of Conference Proceedings

3. *Spitzer/MIPS 24 micron galaxies: the link to near-IR galaxies and the cosmic IR background*
K. Caputi, **H. Dole**, G. Lagache, J.-L. Puget in “The Spitzer Science Center 2005 Conference: Infrared Diagnostics of Galaxy Evolution”, Pasadena, November 2005 (astro-ph/0604236)

4. *The sources of the Cosmic Infrared Background*
G. Lagache, **H. Dole**, J.-L. Puget in “The Fabulous Destiny of Galaxies: Bridging Past and Present”, Marseille, June 2005 (astro-ph/0509556)

5. *Cosmic Infrared Background: Resolved, Unresolved and Spitzer Contributions*
H. Dole, G. Lagache, J.-L. Puget, in “The Spitzer Space Telescope: New Views of the Cosmos” (Pasadena, CA, USA, Nov 2004), PASP, L. Armus eds. (astro-ph/0503017)

6. *The extragalactic Background and its Fluctuations in the Far-Infrared*
G. Lagache, J.L. Puget, A. Abergel, F-X. Désert, **H. Dole**, et al., in “ISO Surveys of a Dusty Universe”, (Ringberg, Germany, 8-12 Nov 1999), Springer Lecture Notes, 2000, #548, Eds D. Lemke, M. Stickel, K. Wilke (astro-ph/0002284)

7. *FIRBACK: observations of the Cosmic Infrared Background at 170 μm*
H. Dole, R. Gispert, G. Lagache, J.L. Puget, in “ISO beyond point sources”, (Vilspa, 14-17 Sept 1999), ESA SP-455, 2000, Eds R. Laureijs, K. Leech, M. Kessler

8. *FIRBACK Far-IR survey with ISO: Data reduction, analysis and first results*
H. Dole, G. Lagache, J.L. Puget, R. Gispert, H. Aussel, F.R. Bouchet, [and 16 co-authors] , in “The Universe as seen by ISO” (Paris, 20-23 Oct 1998), ESA-SP 427, 1999, Eds P. Cox, M. Kessler (astro-ph/9902122)

List of Responsibilities

2005	PI of a GO Spitzer program of IR galaxy spectroscopy. Co-I of 5 programs, including 1 Legacy and 1 Large program
2003	PI of the first Spitzer Deep Survey (ERO) during IOC with IRAC and MIPS
2002	SWIRE Co-I
2000-2004	In charge of the MIPS GTO cosmological surveys with Spitzer; Science plan; coordination of efforts between pour Tucson, Berkeley, Pasadena, and Orsay In charge of the developpement of the analysis tools for the GTO cosmological surveys with MIPS at the University of Arizona In charge of 2 characterization tasks during IOC on MIPS: confusion (at 24, 70 & 160 μm) and measurements of saturation effects in the FIR In charge of the transient characterization of the MIPS photo-imager for Spitzer at 70 et 160 μm at the University of Arizona
1998-2000	Responsible of data reduction and calibration of ISOPHOT data for FIRBACK. Collaboration with members from 15 laboratories
1997-2001	Responsible of the radio follow-up observations of the FIRBACK South field
2001-2002	Founder and organizer of the bi-weekly "IR Wing Science Talks" at Steward Observatory, University of Arizona
march 2000 & nov 1998	Organizer de "afternoon of initiation to IDL" at l'IAS 3 researchers teach IDL to researchers, engineers, technicians at IAS
nov 1999 & may 1998	Founder and organizer of the "Young Scientist Scientific Meeting: at IAS Grad students present their work to the IAS staff
1996-2000	Co-organizer of the IAS weekly colloquium
since 2007	Member of the Physics Departement Board, Université Paris-Sud 11
since 2006	Member of the Recruitment Astronomy Board (CSE) of the Univ. Paris-Sud 11
1998-2000	Student representant a the Univ. Central Council (CEVU) of Univ. Paris Sud 11
1997-1999	Student representant at the Laboratory Council (IAS)
1996-1997	Student representant at the Doctoral School of Astrophysics of the Paris area
2001-2005	Manager of the MIPS GTO web site <code>lully.as.arizona.edu</code>
1998-2003	Manager of the FIRBACK web site <code>wwwfirback.ias.u-psud.fr</code>
since 2005 and 1996-2000	Among the managers of the IAS main web site and IR galaxy web site <code>www.ias.u-psud.fr</code> and <code>www.ias.u-psud.fr/irgalaxies</code>