



The GEISA 2009 Spectroscopic Database System and its CNES/CNRS Ether Products and Services Center Interactive Distribution

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The GEISA (1) (Gestion et Etude des Informations Spectroscopiques Atmosphériques: Management and Study of Atmospheric Spectroscopic Information) computer-accessible database, initiated in 1976, is developed and maintained at LMD (Laboratoire de Météorologie Dynamique, France) a system comprising three independent sub-databases devoted respectively to : line transition parameters, infrared and ultraviolet/visible absorption cross-sections, microphysical and optical properties of atmospheric aerosols. The updated 2009 edition (GEISA-09) archives, in its line transition parameters sub-section, 50 molecules, corresponding to 111 isotopes, for a total of 3,807,997 entries, in the spectral range from 10⁻⁶ to 35,877.031 cm⁻¹. Detailed description of the whole database contents will be documented.

GEISA and GEISA/IASI are implemented on the CNES/CNRS Ether Products and Services Centre WEB site (<http://ether.ipsl.jussieu.fr>), where all archived spectroscopic data can be handled through general and user friendly associated management software facilities.

These facilities will be described and widely illustrated, as well. Interactive demonstrations will be given if technical possibilities are feasible at the time of the Poster Display Session.

More than 350 researchers are registered for on line use of GEISA on Ether.

Currently, GEISA is involved in activities (2) related to the remote sensing of the terrestrial atmosphere thanks to the sounding performances of new generation of hyperspectral Earth' atmospheric sounders, like AIRS (Atmospheric Infrared Sounder -<http://www-airs.jpl.nasa.gov/>), in the USA, and IASI (Infrared Atmospheric Sounding Interferometer -<http://earth-sciences.cnes.fr/IASI/>) in Europe, using the 4A radiative transfer model (3) (4A/LMD <http://ara.lmd.polytechnique.fr>; 4A/OP co-developed by LMD and NOVELTIS -<http://www.noveltis.fr/>) with the support of CNES (2006).

Refs:

(1) Jacquinet-Husson N., N.A. Scott, A. Chédin, L. Crépeau, R. Armante, V. Capelle, J. Orphal, A. Coustenis, C. Boone, N. Poulet-Crovisier, et al. : THE GEISA SPECTROSCOPIC DATABASE: Current and future archive for Earth and planetary atmosphere studies. JQSRT 109 (2008) 1043-1059.

(2) Jacquinet-Husson N., N.A. Scott, A. Chédin, K. Garceran, R. Armante, et al. : The 2003 edition of the GEISA/IASI spectroscopic database. JQSRT, 95 (2005) 429-467.

(3) Scott, N.A. and A. Chedin. A fast line-by-line method for atmospheric absorption computations: The Automatized Atmospheric Absorption Atlas. J. Appl. Meteor., 20 (1981) 556-564.