GEISA 2009: an interactive Spectroscopic Database System

http://ether.ipsl.jussieu.fr

Nicole Jacquinet-Husson (1), Laurent Crépeau (1), Virginie Capelle (1), Noëlle Scott (1), Raymond Armante (1), Alain Chédin (1), Cathy Boonne (2) and Nathalie Poulet-Crovisier (2)

(1) Ecole Polytechnique, Laboratoire de Météorologie Dynamique, Palaiseau Cedex, France (jacquinet@lmd.polytechnique.fr,+33-01.69.33.51.62),
(2) Institut Pierre Simon Laplace, Université Pierre et Marie Curie (Paris-6), Paris, France

OVERVIEW: The development of GEISA (Gestion et Etude des Informations Spectroscopiques Atmosphériques: Management and Study of Spectroscopic Information) was started in 1976 at Laboratoire de Météorologie Dynamique (LMD) in France and regularly updated. GEISA is a computer-accessible spectroscopic database, designed to facilitate accurate forward atmospheric radiative transfer calculations using a line-by-line and (atmospheric) layer-by-layer approach.

INTRODUCTION: The current 2009 edition of GEISA (GEISA-09) is a system comprising three independent sub-databases devoted respectively to line transition parameters, Absorption cross-sections, Microphysical and optical properties of atmospheric aerosols. The GEISA-IASI database derives from GEISA. Since the METOP European polar satellite launch (October 19th 2006), GEISA-IASI is the reference spectroscopic database for the validation of the level-1 IASI data, using the 4A (Automatized Atmospheric Absorption Atlas) radiative transfer model. Information and data are available through ether website.

FROM AN INFORMATIVE WEBSITE …

GEISA site access: from Ether home page by clicking the GEISA logo.

The GEISA site manages a huge amount of documentation on:
- Line transition parameters for GEISA-09 archive: 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
- Cross sections
- Aerosols
- Formats, ...

…TO AN INTERACTIVE WEB ACCESS

An interactive access is proposed for line transition parameters.

FTP ACCESS

An FTP access is proposed to retrieve Line transition parameters, Absorption cross-sections and microphysical and optical properties of atmospheric aerosols.

SUMMARY

These facilities described here permit to more than 350 registered researchers to access to GEISA on line though Ether.

PERSPECTIVES

Our next challenges:
- Perform visualisation to render it more attractive
- Implement Stransac (radiative transfer model) software for interactive calculation

REFERENCES

