Infrastructure

Programmed in Python

Uses the Pyramid framework

SqlAlchemy as an ORM

Dockerized

Automatically managed by the OSUG Kubernetes platform

emaa | excitation of molecules and atoms for astrophysics

search

What's new

EMAA is a database for line radiative transfer studies in the radio and infrared spectral ranges. It includes collisional and spectroscopic data for atoms and molecules of astrophysical interest.
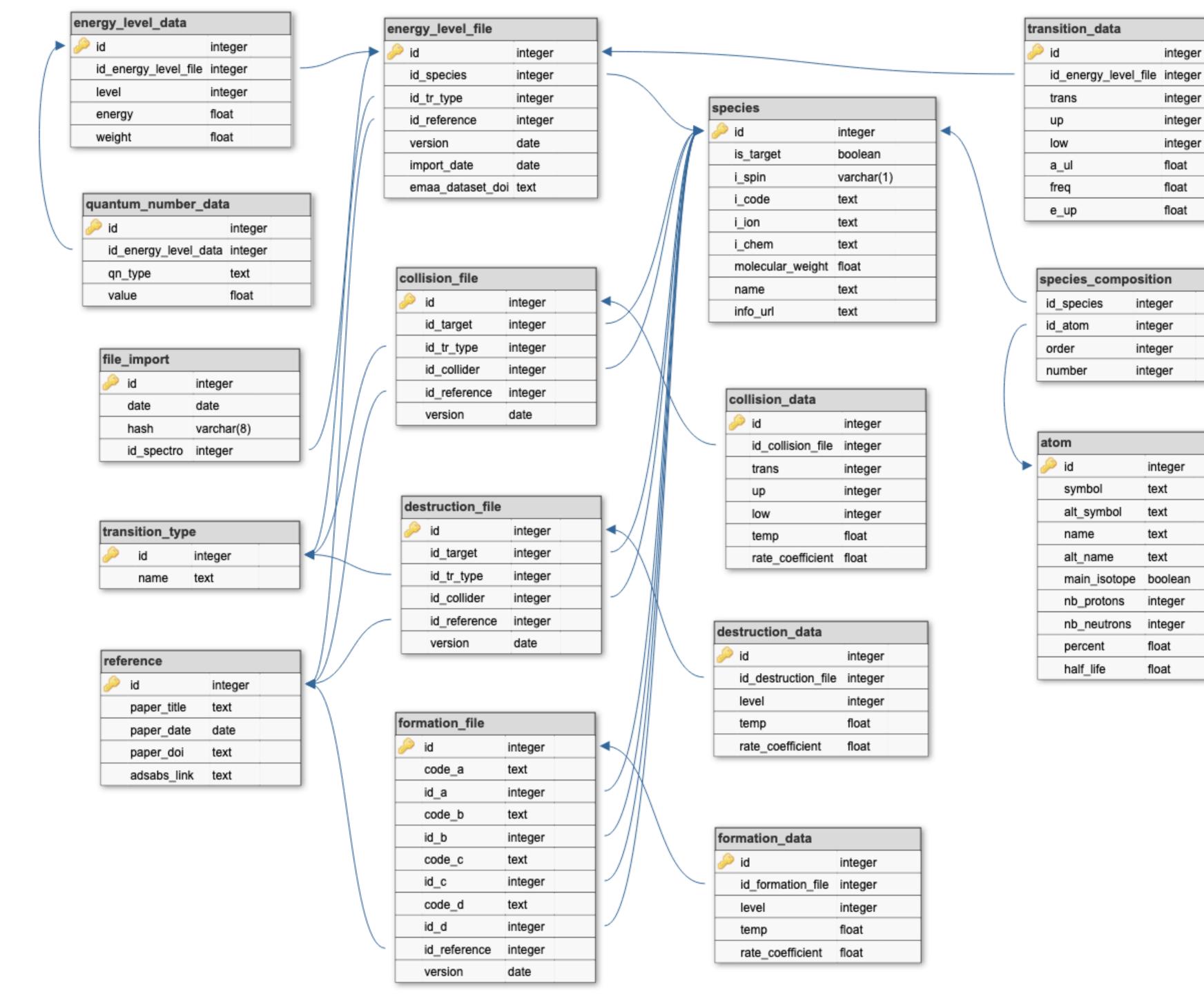
Credits / Acknowledgements

OSUG   pcmi   UNIVERSITÉ Grenoble Alpes   CNRS INSU Observer & comprendre   IPAG

Database structure

energy_level_data
🔑 id	integer
id_energy_level_file	integer
level	integer
energy	float
weight	float

energy_level_file
🔑 id	integer
id_species	integer
id_tr_type	integer
id_reference	integer
version	date
import_date	date
emaa_dataset_doi	text

transition_data
🔑 id	integer
id_energy_level_file	integer
trans	integer
up	integer
low	integer
a_ul	float
freq	float
e_up	float

quantum_number_data
🔑 id	integer
id_energy_level_data	integer
qn_type	text
value	float

species
🔑 id	integer
is_target	boolean
i_spin	varchar(1)
i_code	text
i_ion	text
i_chem	text
molecular_weight	float
name	text
info_url	text

species_composition
id_species	integer
id_atom	integer
order	integer
number	integer

collision_file
🔑 id	integer
id_target	integer
id_tr_type	integer
id_collider	integer
id_reference	integer
version	date

file_import
🔑 id	integer
date	date
hash	varchar(8)
id_spectro	integer

collision_data
🔑 id	integer
id_collision_file	integer
trans	integer
up	integer
low	integer
temp	float
rate_coefficient	float

atom
🔑 id	integer
symbol	text
alt_symbol	text
name	text
alt_name	text
main_isotope	boolean
nb_protons	integer
nb_neutrons	integer
percent	float
half_life	float

transition_type
🔑 id	integer
name	text

destruction_file
🔑 id	integer
id_target	integer
id_tr_type	integer
id_collider	integer
id_reference	integer
version	date

destruction_data
🔑 id	integer
id_destruction_file	integer
level	integer
temp	float
rate_coefficient	float

reference
🔑 id	integer
paper_title	text
paper_date	date
paper_doi	text
adsabs_link	text

formation_file
🔑 id	integer
code_a	text
id_a	integer
code_b	text
id_b	integer
code_c	text
id_c	integer
code_d	text
id_d	integer
id_reference	integer
version	date

formation_data
🔑 id	integer
id_formation_file	integer
level	integer
temp	float
rate_coefficient	float