

European Network on NMR Relaxometry

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NMR Spin-lattice relaxation models fitting to experimental results using a web-based platform

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As an example it is presented a web-based platform for data analysis and model fitting that includes a specific library of the most common spin-lattice relaxation models – <http://fitteia.org>

Examples of relaxation models fits to actual experimental results of recently published concerning the molecular dynamics in liquid crystals, magnetic ionic liquids, and polymers, are presented using the online platform.

The software package is written in C, PERL, and HTML. It implements a n-dimensions least squares method and uses the MINUT routine, from CERN library, as the core minimization engine. The GUI interface accessible by any web browser [1].

Presently the models library includes relaxation models for molecular rotations, translational self-diffusion, RMTD, cross-relaxation, order director fluctuations in nematic and smectic LC phases, Rouse model, paramagnetic relaxation, etc., and can be easily extended.

[1] P.J. Sebastião, "The art of model fitting to experimental results", *Eur. J. Phys.* **35**, 15017 (2014)