

# Computed knowledge base for description of information resources of molecular spectroscopy. 3. Basic and applied ontologies.

*Privezentsev A.I., Tsarkov D.V., Fazliev A.Z.*

## Abstract

This paper examines in details the results of the work has done in Ref [1]. The solution properties of "Quantitative spectroscopy" domain tasks article are described. OWL DL language is used for the presentation of the properties of tasks' solutions. An applied information sources' ontology on the solutions of direct and inverse tasks on the determination of vacuum wavenumbers in molecular spectroscopy of carbon dioxide and its isotopologues is demonstrated as an example. It is shown that the creation of the information sources characterizing tasks solutions' properties allows one to classify the solutions of quantitative spectroscopy tasks and to organize semantic search of valid data in publications. A short description of peculiarities of the table method used in FACT++ inference engine is presented.

**Key words:** quantitative spectroscopy, OWL DL language, applied ontology, semantic search, molecular spectroscopy, isotopologues.

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## About authors

**Privezentsev Alexey Ivanovich** - Dr., reseacher, Centre of Integrated Information Systems, V.E. Zuev Institute of atmospheric optics SB RAS, Tomsk.

E-mail: [remake@iao.ru](mailto:remake@iao.ru)

**Tsarkov Dmitry Victorovich** - Dr., reseacher, University of Manchester, Manchester, Great Britain.

E-mail: [tsarkov@cs.man.ac.uk](mailto:tsarkov@cs.man.ac.uk)

**Fazliev Alexander Zaripovich**- Dr, Head of Centre of Integrated Information Systems, V.E. Zuev Institute of atmospheric optics SB RAS, Tomsk.

E-mail: [faz@iao.ru](mailto:faz@iao.ru)

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