

# Computed knowledge base for describing information resources in molecular spectroscopy. 5. Expert data quality

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## Abstract

It is shown that trust in the content of information resources can be assessed by means of a publishing criterion, with the information resources being of the trusted and distrusted type. The task of assessment of trust consists of four subtasks: (1) building multisets of physical quantities available in primary data sources, (2) alignment of values of physical quantities, (3) formulation of quantitative restrictions for publishing criterion in different ranges of change of physical quantities, and (4) decomposition of expert data. Spectral data publishing criteria and restrictions required for solving data alignment tasks are outlined. Alignment results have been tabulated. Using vacuum wavenumbers as an example, restrictions inherent in publishing criteria are formulated. The assessment of the content trust obtained from solutions to the tasks of decomposition of expert data are presented as the OWL-ontologies. Building knowledge bases of this kind at virtual data centers intended for data intensive science will provide realization of an automatic selection of spectroscopic information resources exhibiting a high degree of trust.

**Key words:** quantitative spectroscopy, data alignment, content trust, publishing criterion.

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