



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Moderní přístup k aplikaci matematických dovedností v přírodovědných  
a ekonomických oborech

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## Mathematical experiences with the computing and fitting of Mössbauer spectra

Zoltán Klencsár

*Institute of Materials and Environmental Chemistry, Research Centre for  
Natural Sciences,  
Hungarian Academy of Sciences, Budapest, Hungary*

When mathematics is used for scientific computation on a digital computer, new aspects of the application of mathematics can emerge, whose consideration and proper solution is inevitable for the implementation of a reliable and efficient scientific computing tool.

After a short introduction to the experimental method of Mössbauer spectroscopy, the talk to be presented aims to illustrate the above with selected examples taken from the author's experience regarding the development of computer software in the field of the computation and fitting of Mössbauer spectra. Walking around the borderline of mathematics and computational science, by means of case studies it will be shown how considerations of the mentioned new aspects can naturally lead to mathematical and algorithmic problems soluble at the undergraduate level. Among other examples, the application of evolution algorithm for solving the multidimensional nonlinear numerical optimization problem of Mössbauer spectrum fitting is going to be treated.

**Přednáška se uskuteční v úterý 12. května 2015 v 10:00  
v učebně 5.008 v hlavní budově PřF**

Na setkání se těší Mgr. Jan Říha, Ph.D. a doc. RNDr. Jiří Pechoušek, Ph.D.  
V případě dotazů prosím pište na [jiri.pechousek@upol.cz](mailto:jiri.pechousek@upol.cz)