Mathematical Knowledge Management and Information Retrieval: Transcending the One-Brain-Barrier

Michael Kohlhase

Jacobs University Bremen, Germany
`m.kohlhase@jacobs-university.de`

Abstract. The talk presents the discipline of Mathematical Knowledge Management (MKM), which studies the possibility of computer-supporting and even automating the representation, cataloguing, retrieval, refactoring, plausibilization, change propagation and in some cases even application of knowledge. Mathematics is a suitable test domain, as mathematical language is intrinsically rich in structure, rigorous but diverse in presentation, and non-trivial but sufficiently well-understood in content.

We focus on theory graph technology here, which supports modular and thus space/computation/cognitively-efficient representations of mathematical knowledge and allows MKM systems to achieve a limited mathematical literacy that is necessary to complement the abilities of human mathematicians and thus to enhance their productivity.

For more details see http://www.ems-ph.org/journals/newsletter/pdf/2014-06-92.pdf.