Real-number Computability from the Perspective of Computer Assisted Proofs in Analysis

Małgorzata Moczurad
Jagiellonian University, Poland
malgorzata.moczurad@uj.edu.pl

We present an interval approach to real-number computations. In some aspects it is similar to existing ones. However, those aspects in which our attitude differs give it several advantages. First, we do not need any oracles; we carry out calculations in a way it is done in real-life practice (e.g. in computer assisted proofs in analysis). Second, the interval point of view allows us to consider various kinds of global information. Apparently, the latter has not been treated in the literature.

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