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Presentation of Redberry: a computer algebra system designed for tensor manipulation

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Redberry is an open source computer algebra system with native support of tensorial expressions. It provides basic computer algebra tools (algebraic manipulations, substitutions, basic simplifications etc.) which are aware of specific features of indexed expressions: contractions of indices, permutational symmetries, multiple index types etc. The high energy physics package includes tools for Feynman diagrams calculation: Dirac and SU(N) algebra, Levi-Civita simplifications and tools for one-loop counterterms calculations in quantum field theory. In this presentation we give detailed overview of Redberry features: from basic manipulations with tensors to real Feynman diagrams calculation, accompanied by many examples.

Primary author: POSLAVSKY, Stanislav (I)

Co-author: Mr BOLOTIN, Dmitry (IBCh RAS)

Presenter: POSLAVSKY, Stanislav (I)

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