

Multi-indices Butcher Series

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In this talk, I will introduce multi-indices B-series which are obtained by replacing rooted trees with a new combinatorial set : multi-indices. The combinatorial shift allows for a more compact description of numerical schemes. Furthermore, such multi-indices B-series uniquely characterise the Taylor expansions of one-dimensional local and affine equivariant maps. I will also briefly introduce the composition and substitution of multi-indices B-series. It is based on the work with Yvain Bruned and Kyrush Ebrahimi-Fard.