

Enhanced Order Composition Methods

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Abstract — By introducing a second method which cancels out the principle local truncation error introduced by the first method, we are able to derive one order higher composition methods. In this paper a fifth order pair of explicit Runge-Kutta methods with stage number $s=5$ are derived. We explore the experiments of this new pair. By comparing with the classic Runge-Kutta method, the Domain and Prince method of order five. Experiment results show the efficiency of our new pair.

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