NUMERICAL CALCULATION OF THE FORTH DERIVATIVE

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In this talk we present a stable numerical algorithm for the computation of the forth derivative of a function from its given noisy data. We use Lavrent'ev regularization scheme to reformulate mentioned ill-posed problem into Fredholm integral equation of the second kind. For the numerical solution of Fredholm integral equation of the second kind we construct a polynomial sequence converging to the exact solution in the L^2 norm. Some numerical examples are included.

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