Trynin, A. Yu.
Absence of stability of interpolation with respect to eigenfunctions of the Sturm-Liouville problem. (English. Russian original) Zbl 1004.41010

From the introduction: The author studies the question of stability of the Lagrange process. He proves instability of the representation of a continuous function by the Lagrange-Sturm-Liouville process subject to small changes of the potential $q$ and/or the constants $h$ and $H$. The regular Sturm-Liouville problem $y'' + [\lambda - q(x)]y = 0$, $y'(0) = hy(0)$, $y'(\pi) = Hy(\pi)$, where $q \in L[0, \pi]$. The equiconvergence of the interpolatory Lagrange-Sturm-Liouville process and Lagrange-Chebyshev process is proved.

MSC:

41A30 Approximation by other special function classes

34L10 Eigenfunctions, eigenfunction expansions, completeness of eigenfunctions of ordinary differential operators