

Peer Review

Review of: "Algorithmic Resilience Under Resource Constraints: The Novosibirsk School and the Method of Fractional Steps (1955–1975)"

Blanca Bujanda¹

1. INAMAT², Universidad Pública de Navarra, Spain

This paper examines the Soviet development of the Method of Fractional Steps between 1955 and 1975, focusing on the Novosibirsk school and the work of N.N. Yanenko. Although operator splitting methods emerged independently in the West and the USSR, Soviet researchers pursued a distinct path shaped by severe hardware limitations and a strong operator-theoretic tradition. Fractional steps allowed multidimensional PDEs to be solved through sequences of one-dimensional problems, dramatically reducing memory requirements on machines such as the BESM-6. Yanenko's key contribution was the systematic theoretical formalization of these methods, whose efficiency-oriented design later proved well suited to modern parallel computing.

Declarations

Potential competing interests: No potential competing interests to declare.