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Alexander Kozhevnikov* (kogevn@math.haifa.ac.il), Dept. of Math., Univ. of Haifa, 31905 Haifa, Israel. *On Solvability of Initial-Boundary Value Problems for Multi-Weighted Parabolic Systems*. Preliminary report.

The most known parabolic equation is the heat or diffusion equation. For this equation t-differentiation is comparable in strength to differentiating 2 times with respect to the spacial coordinates. This means that the t-differentiation has weight 2, whereas spacial differentiation has weight 1. Similarly for general parabolic operators, the t-differentiation has weight $2b$ with some natural b , whereas spacial differentiation has weight 1. I.G. Petrovskii 1938, T. Shirota 1955 and V. Solonnikov 1965 introduced successively more and more general definitions of parabolic systems (see e.g. known monographs by A. Friedman 1964, S.D. Eidelman 1969, O.A. Ladyzhenskaja, V.A. Solonnikov, N.N. Ural'ceva 1968, S.D. Eidelman, N.V. Zhitashu 1998 and references there). In spite of the fact that the entries of matrix operator have different orders with respect to the spacial variables, the t-differentiation has a constant weight $2b$. Therefore all these systems can be called single-weighted. The aim of the presentation is to formulate a more general definition of multi-weighted parabolic systems as well as to state for these systems solvability of the initial-boundary value problems in appropriate Sobolev-type spaces. (Received May 29, 2009)