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Intrinsic boundary conditions for Friedrichs systems

*Communications in Partial Differential Equations* **35** (2010), 9, 1690-1715.

**Abstract.** The admissible boundary conditions for symmetric positive systems of first-order linear partial differential equations, originally introduced by Friedrichs (1958), were recently related to three different sets of intrinsic geometric conditions in graph spaces (Ern, Guermond and Caplain, 2007). We rewrite their cone formalism in terms of an indefinite inner product space, which in a quotient by its isotropic part gives a Kre˘ın space. This new viewpoint allows us to show that the three sets of intrinsic boundary conditions are actually equivalent, which will hopefully facilitate further investigation of their precise relation to the original Friedrichs boundary conditions.