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A hybrid flux model for heat conduction problems. (English) Zbl 0966.80002

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Summary: A hybrid method of solution for the linear problem of heat conduction in a body is presented. The variational support is a two-field functional whose arguments are heat flux, which meets a priori inner thermal equilibrium, and temperature on the boundary of the body. The stationary conditions of the functional are Fourier's law and the prescribed boundary conditions. This variational framework allows to develop a finite element model that exhibits good accuracy, especially in the presence of geometry irregularities in a mesh.

MSC:

[80A17](#) Thermodynamics of continua

[74A15](#) Thermodynamics in solid mechanics

[80M25](#) Other numerical methods (thermodynamics) (MSC2010)

Keywords:

[thermal finite element](#); [hybrid method](#); [heat conduction](#)

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