Characterization of the decay structure for a dissipative linear system and application to the Cauchy problem in thermoelasticity

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Abstract

In this talk, we discuss the dissipative structure for a general linear system. If the relaxation or viscosity terms of the system has symmetric property, Shizuta-Kawashima(1984,1985) introduced a stability condition which induces the decay estimate for the solution of Cauchy problem. However, there are some complicated physical models which possess a non-symmetric terms and we can not apply this stability condition to these models. Under this situation, our purpose of this talk is to extend the stability condition for complicated models and get the quantitative decay estimate. Furthermore, we shall explain the new dissipative structure by using the several concrete examples.