# Transverse Thermal Instability of Strongly Coupled Finitely Thermally Conducting Radiative Plasma

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***Abstract*** **–** The linear thermal instability of magnetized, finitely thermally conducting, viscoelastic fluid with radiative effects is investigated using the modified generalized hydrodynamic (GH) model. A general dispersion relation is derived with the help of linearized perturbation equations using the normal mode analysis method and it is discussed for transverse mode of propagation. In transverse mode of propagation, we find that the fundamental thermal criterion of instability is determined which depends up on thermal conductivity, radiative heat-loss function, shear viscosity and bulk viscosity while it is independent of magnetic field. The viscoelastic effect modifies the fundamental thermal criterion of instability. Numerical calculations have been performed to see the effect of different parameters on the growth rate of the thermal instability.

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