

# ***Seminar 2022***

**Math**

On the temperature distribution of  
a body heated by radiation

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**Abstract:** In this talk, we introduce the stationary radiative transfer equation in the local thermodynamic equilibrium. Via the equation, we study the temperature distribution of a body when the heat is transmitted only by radiation. The heat transmitted by convection and conduction is ignored. We prove that the stationary radiative transfer equation coupled with the non-local temperature equation is well-posed in a generic case when emission-absorption or scattering of interacting radiation is considered. The emission-absorption coefficient is generic and can depend on the frequency of radiation. We also introduce the entropy production formula of the system. This is a joint-work with Juan J. L. Velázquez.



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