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Analysis of the Radiative Heat Transfer in Chains of Nanoparticles

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The transfer of heat through radiation plays a crucial role in the thermalization of nanoscale objects thanks to the involvement of evanescent waves. As nanotechnology becomes a prominent area of research and development, the understanding of this phenomenon is becoming more and more crucial. In this work, we investigate the thermalization of linear chains of SiC nanospheres. To that end, we develop an analytical method that allows us to calculate the radiative heat exchange between the particles through the analysis of the normal modes of the system and their corresponding decay rates. Using this approach we analyze the time evolution of the temperature distribution of different structures