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Heat transfer and non-equilibrium Casimir force in nanostructured surfaces ROMAIN GUÉROUT, SERGE REYNAUD, ASTRID LAMBRECHT, Laboratoire Kastler-Brossel — I'll review recent calculations for Casimir interactions between nanostructured surfaces both at thermodynamic equilibrium and out of equilibrium in the framework of the scattering theory. I'll emphasize on the interplay between the thermal Casimir force and the geometry of the surfaces. We predict an enhancement in the heat transfer between metallic gratings due to the appearance of spoof surface plasmons modes. We also show that the thermal component of the Casimir force arise at shorter separation distance in the case of nanostructured surfaces.

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