

## **Non-equilibrium Casimir-Lifshitz Force between Gratings**

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I will present our studies of the Casimir-Lifshitz interaction in a system consisting of two different one-dimensional dielectric lamellar gratings at two different temperatures, immersed in an environment having a third temperature [1]. The calculations are based on the knowledge of the scattering operators, obtained through the Fourier modal method. It will be shown that the interplay between non-equilibrium effects and geometrical periodicity offers a rich scenario for the manipulation of the force. Finally I will present our latest results on a sphere-grating system at equilibrium [2].

### **References**

- [1] A. Noto, R. Messina, B. Guiza and M. Antezza, Phys. Rev. A, 90, 022120 (2014).
- [2] R. Messina, P. A. Maia Neto, B. Guizal and M. Antezza, Phys. Rev. A, 92, 062504 (2015).