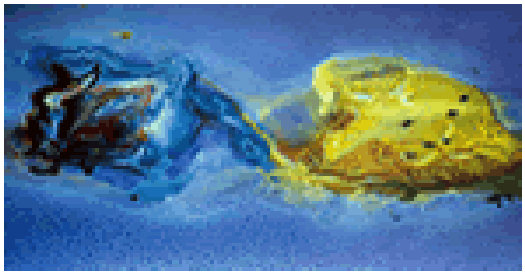

Contribution ID: **222** Type: **Invited plenary talk**

Nonperturbative Casimir Effects

Saturday 4 August 2018 11:30 (30 minutes)

The Casimir effect is a quantum phenomenon rooted in the fact that vacuum fluctuations of quantum fields are affected by the presence of physical objects and boundaries. As the energy spectrum of vacuum fluctuations depends on distances between (and geometries of) physical bodies, the quantum vacuum exerts a small but experimentally detectable force on neutral objects. Usually, the associated Casimir energy is calculated for free or weakly coupled quantum fields. In our talk, we review recent studies of the Casimir effect in non-perturbative regimes: we discuss chiral and deconfining transitions in finite geometries, describe the influence of phase transitions on the Casimir energy and characterize the role of topological defects on Casimir phenomenon and vice versa.

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