

# XVth Quark Confinement and the Hadron Spectrum



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## Superinsulators: the discovery of electric confinement in condensed matter systems

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Superinsulators are a new topological state of matter, predicted by our collaboration and experimentally observed in the critical vicinity of the superconductor-insulator transition (SIT). Superinsulators are dual to superconductors and realise electric-magnetic (S) duality. In superinsulators, Cooper pairs are linearly bound by electric fields squeezed into strings (dual Meissner effect) by a monopole condensate (instantons plasma in  $(2+1)$  dimensions), in analogy to quarks in hadrons. Superinsulators realise, thus, the electric version of the dual superconductor mechanism proposed to explain confinement in QCD.

**Author:** DIAMANTINI TRUGENBERGER, Maria Cristina (Universita e INFN, Perugia (IT))

**Presenter:** DIAMANTINI TRUGENBERGER, Maria Cristina (Universita e INFN, Perugia (IT))

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