

Science Colloquia

**Sala Conferenze, DFA
03/06/2025 h 14:45**

In recent years, new exotic polar textures featuring curled polarization patterns (vortices, skyrmions, etc...) have been unraveled in ferroelectric ultrathin films, superlattices or nanostructures. Understanding and controlling topological polar textures open up exciting possibilities for advanced applications in memories, logic devices or sensors. So far, all polar textures have been realized on oxide substrates (such as SrTiO₃ or scandates), which limits their applicability. In this talk, I will present the stabilization of topological polar states in BaTiO₃-based materials epitaxially grown on silicon. I will also briefly discuss our work on ferroelectric devices for neuromorphic computing applications.



I Science Colloquia del DFA "Ettore Majorana", sono appuntamenti con la scienza dedicati a Ricercatrici e Ricercatori, Studentesse e Studenti (della Laurea Magistrale in Physics, del terzo anno della Laurea Triennale in Fisica, e dei Dottorati al DFA) interessati a condividere argomenti ed esperienze di ricerca. I Science Colloquia, coordinati dai Proff. Giuseppe Falci e Livio Lamia, si tengono con cadenza mensile.

Ferroelectrics at the nanoscale on silicon: Topological polar textures

**Catherine Dubourdieu
(HZB & FUBerlin, DE)**



**FISICA E ASTRONOMIA
"ETTORE MAJORANA"**

