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CHAIRE DE PHYSIQUE DE LA MATIÈRE CONDENSÉE

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SEMINAIRE

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The Materials Physics of Complex Oxides

Complex oxide materials exhibit a tremendous diversity of behavior encompassing a range of functional properties, such as magnetism, ferroelectricity, multiferroicity, and superconductivity. As diverse as this behavior is, an even richer spectrum of possibilities becomes available if one starts to combine different complex oxides together with atomic-scale precision to create new artificially structured, heterogeneous systems. In these nanostructured materials, the atomic-scale interface of these systems can play a decisive role in determining the observed behavior, with new physical properties emerging. In this talk, we describe the electrostatic control of strongly correlated behavior, such as magnetism, the Mott metal-insulator transition, and orbital polarization, and we discuss the interplay between new interfacial structural motifs and functional behavior.