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Sala de Grados
Facultad de Ciencias

Combining magnetism and topology: from magnetic doping to novel interfaces and intrinsic magnetic topological insulators



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In this talk, I will overview the developments in the field of magnetic topological insulators (MTIs) that led to the discovery of the intrinsic MTIs of the MnBi_2Te_4 family that attracts a great deal of attention nowadays. First, to describe the context in which materials such as MnBi_2Te_4 appeared in the research arena, I will discuss the magnetic doping and magnetic proximity effect approaches of introducing magnetism into a TI. Then, the two types of novel interfaces involving $\text{MnBi}_2\text{Te}(\text{Se})_4$ compounds will be discussed, as they are expected to show certain advantages over the latter two approaches. Next, the discovery of intrinsic MTIs of the $\text{MnBi}_2\text{Te}(\text{Se})_4$ family will be overviewed. Finally, concerning current challenges of this field, we will consider in detail the issue of the Dirac point gap in the MnBi_2Te_4 topological surface state that has caused a lot of controversy recently.