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Degree Problems for Offset Curves and Surfaces

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The offset construction is an important operation in many CAGD/CAMD systems. In the last years our research group has been studying many properties of this construction: irreducibility, parametrization, genus, topology, etc. In this talk we will first briefly review these results. We will introduce the notion of generic offset equation, and we will focus in the degree problem for the generic offset. We will show formulae to compute its total and partial degrees. Finally, we will see how to (partially) extend these ideas to the case of surfaces.