Rationality and related concepts in families

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Determining whether rationality specializes in families is a classical question. Several methods have been used to prove and disprove this. Recently, Nicaise and Shinder used motivic methods to prove that stable rationality is preserved under certain degeneration of smooth families. Soon after, Kontsevich and Tschinkel developed these ideas to prove the same for rationality. In this talk, I will survey these results and discuss how they can be used to study the degree of irrationality in families.