Smooth specialization of hypersurfaces

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Abstract

In this presentation, we give a structure theorem for projective manifolds W_0 with the property of admitting a one parameter deformation where W_t is a hypersurface in a projective smooth manifold Z_t. Their structure is the one of special iterated univariate coverings, which we call normal type. We give an application to the case where Z_t is a projective space, respectively an abelian variety. We also give a characterizaton of smooth ample hypersurfaces in abelian varieties and describe an irreducible connected component of their moduli space. This is based on joint work with Fabrizio Catanese.