

Fano threefold hypersurfaces

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In 1979 Reid discovered the 95 families of K3 surfaces in three dimensional weighted projective spaces. After this, Fletcher, who was a Ph. D. student of Reid, discovered the 95 families of weighted Fano threefold hypersurfaces in his Ph. D. dissertation in 1988. These are quasi-smooth hypersurfaces of degrees d with only terminal singularities in weighted projective spaces $\mathbb{P}(1, a_1, a_2, a_3, a_4)$, where $d = a_1 + a_2 + a_3 + a_4$. The 95 families are determined by the quadruples of non-decreasing positive integers (a_1, a_2, a_3, a_4) . All Reid's 95 families of K3 surfaces arises as anticanonical divisors in Fletcher's 95 families of Fano threefolds.

In my talk, non-rationality of quasi-smooth hypersurfaces in the 95 families will be discussed.