INFINITELY NEAR SINGULARITIES

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Let $\xi \in X \subset Z$ be a singular point of a hypersurface X in a smooth ambient manifold Z. Let $b = mult_\xi X$ be the multiplicity of X at ξ, i.e., the order (of vanishing) of the defining equation $f \in \mathcal{O}_{Z,\xi}$ of $X \subset Z$.

The *infinitely near singular points* of X at ξ means those points of the *permissible* birational tansforms $\tilde{X}$ of X which are mapped to ξ and have the same multiplicity b.

My talk will be about the structure of the totality of infinitely near singular points of X at ξ, a certain finite presentation theorem in general and some explicit presentation theorems in some special cases.

References are

1. Hironaka, H.,"Theory of inifinitely near singular points",
   J.Korean Math.Soc. 40(2003), pp.901-920
2. Hironaka, H.,"Three key theorems on infinitely near singularities",
   Seminaires & Congres, Societe Math.de France, 10(2005), pp.87-126

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