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4. Algebraic Geometry

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Arancibia, Jacqueline, Departmento de Matemática, UFPB–J. Pessoa, Brasil

Canonical Curves in P^3

From Riemann-Roch theorem we can conclude that a canonical curve in $\mathbf{P}^3$ is a complete intersection of a quadric and a cubic surface. This permit to define a rational map from $X = \{(f_2, g_3) \mid g_3$ is a cubic defined module a quadric $f_2\}$ to $\mathbf{H} \subset Hilb^{6t-3}\mathbf{P}^3$ the Hilbert's component whose generic point correspond to a canonical curve. Our goal is to extend this map to a morphism, in fact this is equivalent to construct a flat family over an appropiate variety that look likes X out of an open set. We use the same technic that in [1] and at the moment we conjecture that after 5 blow-up starting from X along appropiate smooth centers we obtain the variety indicated above.

[1] J. Rojas and I. Vainsencher, *Conical Sextuplrts*, Communications in Algebra, 24(11), 3437-3457,1996.