Seminari de Geometria Algebraica 2010/2011 (UB-UPC) Divendres 5 de novembre a les 16 h. a l'aula T2 FM-UB http://atlas.mat.ub.es/sga

Vector spaces of matrices of constant rank

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After giving a short overview of the topic in general, I will concentrate on the special case of symmetric and skew-symmetric square matrices, explaining the connections with some classical problems in algebraic geometry, regarding varieties with dual defect and Grassmannians of lines. I will then speak of some recent results on the maximal dimension of these vector spaces due to Ilic and Landsberg, and on some classification results obtained in collaboration with Laurent Manivel and Maria Lucia Fania.