Kempner Colloquium

Vector bundles and tensor decomposition

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Tensors can be seen as multidimensional matrices. The rank and the determinant can be defined in this multidimensional setting, but their usual link drops. The decomposition of a tensor as a sum of decomposable ones (rank one) has several applications in signal processing and other areas. We will describe a technique to construct the decomposition explicitly, working in many interesting cases, that we call nonabelian apolarity. Indeed it relies on vector bundles and reduces to the classical XIX century apolarity for line bundles.

Monday October 3, 2011
4:00 p.m.
MATH 350