1046-17-70 **Victor Protsak***, Malott Hall, Ithaca, NY 14853. *Noncommutative linear algebra and primitive ideals.*

Many classical results about matrices involving the determinant, characteristic and minimal polynomials admit natural noncommutative generalizations. For example, the Capelli identity expresses a relation between the characteristic polynomials of AB and A^tB^t for certain matrices of differential operators. This is what I mean by "noncommutative linear algebra".

While already interesting in itself, this formalism throws new light on the known subtle differences between primitive ideals in the universal enveloping algebras and the coadjoint orbits. (Received July 21, 2008)