**ELA**

http://math.technion.ac.il/iic/ela

# FULL RANK FACTORIZATION AND THE FLANDERS THEOREM[*]

RAFAEL CANTÓ[†], BEATRIZ RICARTE[†], AND ANA M. URBANO[†]

**Abstract.** In this paper, a method is given that obtains a full rank factorization of a rectangular matrix. It is studied when a matrix has a full rank factorization in echelon form. If this factorization exists, it is proven to be unique. Applying the full rank factorization in echelon form the Flanders theorem and its converse in a particular case are proven.

**Key words.** Echelon form of a matrix, LU factorization, Full rank factorization, Flanders theorem.

**AMS subject classifications.** 15A15, 15A23.