

## MOMENT MATRIX OF SELF-SIMILAR MEASURES\*

C. ESCRIBANO<sup>†</sup>, M. A. SASTRE<sup>‡</sup>, AND E. TORRANO<sup>‡</sup>

**Abstract.** We give in this paper an expression for the moment matrix associated to a self-similar measure given by an Iterated Function Systems (IFS). This expression translates the self-similarity property of a measure to its moment matrix.

This matrix relation shows that the properties of a measure are reflected, not only in the equation of its Jacobi matrix, as stated in Krein theorem, but also in the moment matrix.

**Key words.** self-similar measures, orthogonal polynomials, moment matrix

**AMS subject classifications.** 42C05, 28A80

---

\*Received December 10, 2004. Accepted for publication May 5, 2005. Recommended by J. Arvesú.

<sup>†</sup>Departamento de Matemática Aplicada, Facultad de Informática Universidad Politécnica de Madrid, Spain (cescribano@fi.upm.es).

<sup>‡</sup>Facultad de Informática Universidad Politécnica de Madrid, Spain (masastre, emilio@fi.upm.es).