1016-15-267   **Rowan Killip** and **Irina Nenciu*** (`nenciu@ias.edu`), School of Mathematics, Institute for Advanced Study, 1 Einstein Drive, Princeton, NJ 08540. *CMV: the unitary analogue of Jacobi matrices.*

We discuss a number of properties of CMV matrices, by which we mean the class of unitary matrices recently introduced by Cantero, Moral, and Velazquez. We argue that they play an equivalent role among unitary matrices to that of Jacobi matrices among all Hermitian matrices. In particular, we describe the analogues of well-known properties of Jacobi matrices: foliation by co-adjoint orbits, a natural symplectic structure, Lax representation for an integrable lattice system (Ablowitz-Ladik), and the relation to orthogonal polynomials. As offshoots of our analysis, we construct action/angle variables for the finite Ablowitz-Ladik hierarchy and describe the long-time behaviour of this system. (Received February 13, 2006)