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Yuji Kodama and **Virgil U Pierce*** (vpierce@math.ohio-state.edu). *The Pfaff lattice and the symplectic eigenvalue problem.*

The SR-algorithm is a version of the QR-algorithm which computes the eigenvalues of a symplectic matrix while preserving the symplectic form of the matrix. We will show that this algorithm is equivalent to a member of the Pfaff lattice hierarchy. The Pfaff lattice hierarchy was introduced by Adler and van Moerbeke to describe the partition functions of GOE and GSE random matrices. This lattice is presented as a system of evolution equations on a matrix variable based on the SR-factorization. We will show that the even members of Pfaff lattice hierarchy give alternative algorithms for diagonalizing a symplectic matrix which preserves the symplectic form of the matrix. (Received September 19, 2007)