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The Pfaff lattice was introduced by Adler and van Moerbeke to describe the partition functions for the random matrix models of GOE and GSE type. We have shown that the finite versions of this lattice are an integrable system in the Arnold-Liouville sense. We have computed the isospectral varieties for the finite Pfaff lattices. This geometric interpretation shows a striking difference between the GOE and GSE situations, and provides a connection to the GUE random matrix model as well. (Received January 18, 2007)