Suppose $G$ is a split real reductive Lie group (like $SL(2, R)$, for instance). Then $G$ admits an essentially unique nonlinear two-fold double cover.

In the past few years, Barbasch and Barbasch-Ciubotaru have given a striking description of the spherical unitary dual of $G$.

The point of this talk is to recall their results and then show how they can be used to give very precise information about the unitary dual of the double cover of $G$.

The relationship between unitary representations of $G$ and its double cover is the Shimura correspondence of the title. This talk represents joint work with Jeffrey Adams, Dan Barbasch, Annegret Paul, and David Vogan.