CORRESPONDENCES BETWEEN $K3$ SURFACES

ABSTRACT. In this talk we show that there is a correspondence between some $K3$ surfaces with non-isometric transcendental lattices constructed as a twist of the transcendental lattice of the Jacobian of a generic genus 2 curve. Moreover, we show the existence of a correspondence between a general $K3$ surface with $\rho = 17$ and a Kummer surface having transcendental lattices $\mathbf{Q}$-Hodge isomorphic. This reports a joint work with Giuseppe Lombardo and a geometric example due to Igor Dolgachev.