Enriques involutions on singular K3 surfaces of small discriminants

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Abstract. We classify Enriques involutions on a K3 surface, up to conjugation in the automorphism group, in terms of lattice theory. We enumerate such involutions on singular K3 surfaces with transcendental lattice of discriminant smaller than or equal to 36. For 11 of these K3 surfaces, we apply Borcherds' method to compute the automorphism group of the Enriques surfaces covered by them. In particular, we investigate the structure of the two most algebraic Enriques surfaces.

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