Daniel Platt (King's College, London):
K3 surfaces with low Picard number

What is the lowest possible Picard number for a K3 surface which admits a holomorphic involution and a commuting anti-holomorphic involution? What if we ask for our K3 to be a quartic surface? These questions are motivated by gauge theory in higher dimensions, and I will briefly mention the connection between the two fields. Most time will be spent on explaining why the answer is "1" for the first question, and "2" for the second question (as well as all other K3 surfaces with degree at least 4). I will also point out where we used computer aid for our proof. This is joined work with Dino Festi and Wim Nijgh.