1145-11-493 **Stanley Yao Xiao*** (`stanley.xiao@utoronto.ca`), Department of Mathematics, University of Toronto, 40 St. George Street, Toronto, Ontario M5S 2E4, Canada. *Binary quartic forms with vanishing J-invariant.*

In this talk we enumerate $\mathrm{GL}_2(\mathbb{Z})$-equivalence classes of totally real integral binary quartic forms with vanishing J-invariant with bounded discriminant. Time permitting, we will also discuss applications to enumerating 2-Selmer elements of elliptic curves with a marked two torsion point. (Received September 07, 2018)