1135-11-1842 **David Lowry-Duda*** (d.lowry@warwick.ac.uk), Warwick Mathematics Institute, Zeeman Building, University of Warwick, Coventry, CV4 7AL, United Kingdom. *Counting lattice points on hyperboloids.*

In this talk, we discuss improved asymptotics for the number of lattice points $x = (x_1, \dots, x_{d+1})$ with $\|x\| < R$ and lying on the one-sheeted hyperboloid $x_1^2 + \cdots + x_k^2 = x_{d+1}^2 + h$. Counting these lattice points is a problem very similar in flavor to the generalized Gauss circle problem, which concerns counting all lattice points lying within a d-dimensional sphere of radius R. We describe ideas and techniques from shifted convolution sums and modular forms leading to improved results on both sharp and smoothed asymptotics. (Received September 25, 2017)