

## Exposé court

### 147 *The number of lattice points in thin sectors*

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On the circle of radius  $R$  centred at the origin, consider a thin sector about the fixed line  $y = \alpha x$ , whose central angle shrinks as  $R \rightarrow \infty$ . In this talk, I will discuss the number of integer lattice points lying in such a sector, and how to establish an asymptotic count for this number. The results depend both on the decay rate of the central angle and on the rationality/irrationality type of  $\alpha$ ; in particular, if  $\alpha$  is Diophantine, then the number of lattice points is asymptotic to the area of the sector in an essentially optimal regime for the angle's decay rate. Based on joint work with Ezra Waxman.