

The Diamond of Integrability

I shall review recent progress in understanding the connections between representation theory, enumerative geometry, and integrable systems inspired by a certain class of physical theories (so-called $N=2^*$ theories). Conveniently one can arrange most of known results into the Diamond <https://math.berkeley.edu/~pkoroteev/diamond33.pdf>. I will describe some of its corners as well as highlight open questions.