

Enumerative geometry of flag varieties and prime numbers

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Enumerative geometry, as formulated in Gromov–Witten theory, encodes curve-counting information on smooth projective varieties. Such data can be organized in different ways, giving rise to rich geometric structures and invariants, including quantum cohomology and quantum spectra. In the work \emph{G.~Cotti, “Coalescence Phenomenon of Quantum Cohomology of Grassmannians and the Distribution of Prime Numbers,” IMRN, 2022}, an unexpected connection was observed between the quantum cohomology of Grassmannians and the distribution of prime numbers. In this talk, I will present recent progress extending this perspective to the enumerative geometry of more general partial flag varieties, highlighting how the relation with prime numbers persists in a broader setting.

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