

Enumerate Curves and Modularity

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Abstract:

Motivated by mathematical physics, the enumerative geometry gradually build a firm mathematical ground for enumerating objects which looks like "curve in a complex variety". For various kind of objects that different setups enumerates, the resulted generating functions (encoding the counting) are checked to be modular forms (or quasi-modular forms). We will brief the story and left conjectures as like the problem about modularity (S duality).