# Punctured holomorphic curves in symplectic geometry

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Holomorphic curves have been the main tool in symplectic geometry ever since their introduction by Gromov in 1985. Gromov originally considered holomorphic curves defined on compact Riemann surfaces, possibly with boundary. Since then, punctured holomorphic curves (defined on punctured Riemann surfaces with suitable asymptotic conditions) have become increasingly important. They first entered symplectic geometry through the work of Floer and Hofer around 1990, and were formalized as ßymplectic field theory"by Eliashberg, Givental and Hofer in 2000.

In this talk I will describe the different types of holomorphic curves in symplectic geometry and illustrate their use by various examples.

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