## A recent approach to the smooth 4-dimensional Poincaré conjecture

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**Abstract.** We will report on the preprint (arXiv:0906.5177) written by M. Freedman, R. Gompf, S. Morrison and K. Walker. They proposed some strategies to disprove/prove the smooth 4-dimensional Poincaré conjecture, which is called "SPC4" for short. In this talk, we mainly focus on one of their strategies to disprove SPC4 by using the Rasmussen invariant, which is a knot concordance invariant derived from (a variant of) the Khovanov homology theory.