Spin Depolarization by the Beam-Beam Effect, Y.K. BATYGIN, RIKEN; T. KATAYAMA, University of Tokyo - Particle colliders with polarized beams require careful control of spin depolarization. During acceleration spin is subjected to intrinsic and imperfection resonances resulting in depolarization. Extra source of depolarization is beam-beam collisions. Due to beam-beam interaction, particle motion become essentially nonlinear and under some circumstances unstable. In present paper effect of beam-beam collision on spin depolarization in a proton-proton collider is studied. Betatron particle motion is defined as a linear oscillator perturbed by nonlinear beam-beam kick. Spin rotation is described by subsequent spin matrix multiplication in dipole magnet, in Siberian Snakes and in beam-beam interaction point. Matrix for spin advance after arbitrary large number of turns is found. Performed study indicates, that spin depolarization due to beam-beam collisions is suppressed if beam-beam interaction is stable and if operation point is far enough from spin resonances. Meanwhile, in the absence of Snakes or under beam-beam instability, spin is a subject of strong depolarization. Analytical estimations are confirmed by results of computer simulations.