

Overview of the Longitudinal and Transverse Bunch by Bunch Feedback at DAFNE

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DAFNE is an electron-positron collider in operation at LNF-INFN for physics experiments since 1999. It produces e^+/e^- collisions at a center of mass energy of 1.02 GeV. Up to 120 bunches, with a total average current in the range of 1A/2A are stored in two 97 m main rings and collide in the interaction region, where a detector for the SIDDARTHA-2 experiment is currently installed. In order to reduce coupled-bunch instabilities bunch-by-bunch feedbacks were installed since the start of operations and upgraded during the last two decades. A total of three feedbacks are used per ring (e^+/e^-). One for the longitudinal motion of the particles, two for the transversal motion (vertical and horizontal). Since its first runs, DAFNE has always shown dynamic behaviour strongly dependent on the bunch-by-bunch feedback. The latter is in fact critical in order to achieve the aforementioned values of currents. An overview of the feedback systems will be presented, as well as the most recent measurements and results obtained.