

**Commissioning of the TRITRON**, A. CAZAN, P. SCHUETZ and U. TRINKS, Technical University Munich, D 85748 Garching, Germany - The TRITRON is the prototype of a separated orbit cyclotron with both magnets and rf-cavities superconducting, providing for strong longitudinal and transversal focusing. Recently it was demonstrated, that the principle works as anticipated. A sulphur ion beam was accelerated continuously from 40 MeV to 72 MeV. All components of the TRITRON work very reliable and stable. The fields in the channel magnets are reproducibly correlated to the currents in the superconducting coils. The 6 superconducting rf-cavities of the reentrant type (170 Mhz, PbSn on copper, indirectly cooled, no separate vacuum) operate well above the design values (5 MV/m, dissipated heat 5 W per cavity), though not being handled under special clean room conditions. Based on these good results the design of a system of superconducting separated orbit cyclotrons with enlarged turn separation for the acceleration of high intensity proton beams to an energy of 1 GeV will be presented.