

High-voltage Structure Development for the EGP-15 Tandem (Project), K.A. REZVYKH, V.A. ROMANOV, IPPE, Obninsk - The method for calculation of breakdown voltage has been developed on the basis of the consideration of main factors for gas breakdown and the results of preliminary experiment. This base method allows to predict the breakdown voltage for gaseous high-voltage gaps of accelerator with precision of up to 1-5%. The calculation of the electrostatic fields has been made based on our computer code REP with the guaranteed precision of about 1%. As a result, some methods of optimization were studied for the tank with the variable diameter, for the profile of the column equipotential hoops (including the new form - united oriented oval) and for the terminal profile. Several machines whose dimensions are similar (FN, EGP-15 and the Shanghai 6 MV tandem) are compared.