

**Meeting:** 1000, Albuquerque, New Mexico, SS 5A, Special Session on Categories and Operads in Topology, Geometry, Physics and Other Applications

1000-83-67            **Pavol Valent\*** (Pavol.Valent@stonline.sk), Okružna 12, 93401 Levice, Slovak Republik, Levice, AA, Slovak Rep. *Einstein's Special Theory of Relativity and its Two Complementary Theories.*

The presentation introduces mathematical model of the Complementary Special Theory of Relativity (CSTR) in re Einstein's Special Theory of Relativity (STR). The CSTR is derived following criterion of the logical independence of the Einstein's postulates. The principal parts of the work are: new postulates, transformation equations, frequency transformations, law of the addition of velocities, aberration formula, red shift from galaxies, and proposal for the one-way velocity experiment. Existence of the CSTR transverse Doppler effect formula, which is different from Einstein's, is the crucial moment of the new theory. Moreover, the article demonstrates some physical applications of the CSTR on the John D. Anderson's discovery of an quasi acceleration of the Pioneer 10 spacecraft. It will be shown that the Pioneer 10 does not accelerate, but it moves with predicted velocity, and that the DSN (Deep Space Network) data remarkably well fit the predictions of the CSTR theory in range, Doppler, annual, and diurnal periodicity of the phenomenon. (Received August 12, 2004)