

There have been some attempts to generalize the Galilean rotational transformation to high rotational velocities. In this talk, after a review on basic problems associated with rotation and with Galilean and special relativistic approaches to analyze the rotating phenomena, I will introduce a modified version of relativistic rotation transformation proposed by Philip Franklin in 1922 and will have a comparative study of Fermi metric of a uniformly rotating observer and the space-time metric in a rotating frame obtained through the modified Franklin transformation. I will consider rotational phenomena including transverse Doppler effect, Sagnac effect, Thomas precession, length measurements and Unruh effect in rotating frames.