Abstract

Simulations of density fluctuation measured by Li-beam have been done in three dimensional stellarator geometry. Simulations have shown the importance of sheared poloidal flows in the detected fine structure of spatio-temporal correlation functions of both density and light fluctuations. New method for detection of fluctuating shear flows has been developed. This method is based on single point correlation (autocorrelation) measurement. A simple formula for the relative scatter of the autocorrelation function has been analytically derived. Fluctuation measurements on the CASTOR tokamak have been performed. It was found that radially localized and poloidally elongated, low frequency random flow velocity fluctuations are present in the edge plasma of CASTOR tokamak.