

***Use of heterodyne and homodyne x-ray photon correlation spectroscopy
to measure velocity distributions***

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In the late eighties W. Goldburg started to use dynamic light scattering to study velocity correlation functions in turbulent systems. In this talk, I will discuss extending these ideas to x-rays. One advance in this technique is the use of area detectors. With heterodyne techniques one obtains direct information on the velocity and by combining homodyne and heterodyne techniques one can measure information on local shear and also get information on the velocity distribution. One could imagine using these measurements study the onset of turbulence and the nature of the boundary layer on turbulent flow over a boundary.