

Air Pollution and Climate

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Abstract

In recent studies aerosols (dust, sulfate, soot) have been recognized as potentially important radiative forcing factors of climate due to their ability to scatter and absorb sunlight. The GISS GCM (like all other GCMs) relies on economics based assumptions on fossil fuel burning to model the anthropogenic aerosol forcing of climate. Radiative measurements are used to validate aerosol-forcing scenarios. Only a few of these measurements exist on the East Coast. Funding is requested for a preliminary study to test aerosol climatologies for urban regions. I propose to investigate how representative the Lamont sunphotometer is for the Metropolitan area. Further studies are expected if this preliminary test succeeds. Two test campaigns are proposed to measure background aerosol optical depths from the Metropolitan area with hand held sunphotometer on board of a balloon and on the ground. One flight is proposed along the Hudson Valley and one in New Jersey.