Toward an improved understanding of particle dry deposition velocity

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The overarching objective of the proposed study is to improve the current understanding of particle dry deposition velocities over variable surfaces and advance existing particle vd parameterizations through novel experimental techniques. By simultaneously conducting refractory black carbon (rBC) turbulent vertical flux and filter deposition measurements over different surfaces (i.e., grassland, broadleaf forest) under variable atmospheric conditions, we will be able to develop a robust physical explanation of the processes involved in submicron particle dry deposition. The project has four specific tasks:

1. Carry out chamber measurements for size-selected chemically-speciated particle deposition
2. Optimize techniques for measuring BC from filter extracts
3. Conduct ambient measurements of rBC fluxes and filter deposition
4. Improve existing analytical formulations for aerosol dry deposition