Adding Multi-wavelength Capabilities to the IMPROVE HIPS System

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Presented at Incline Village, Nevada
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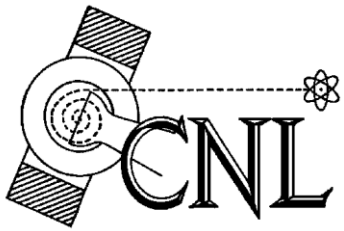

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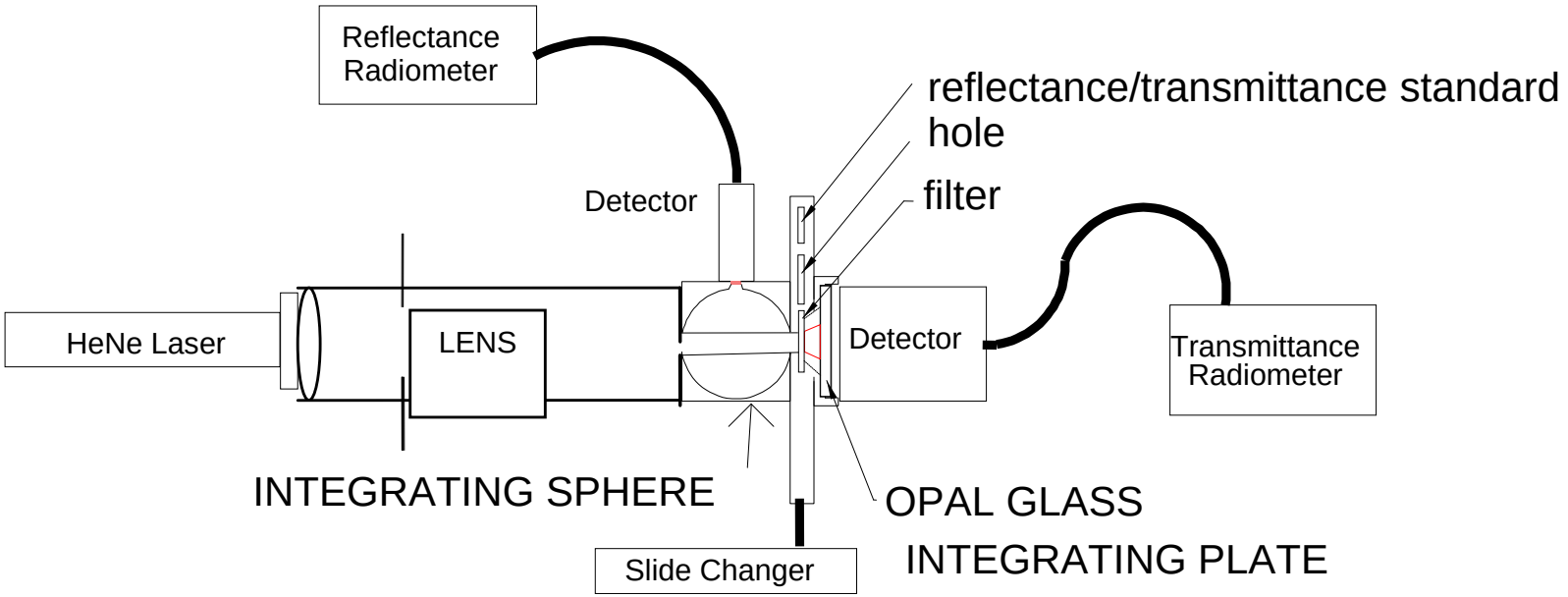
Current HIPS System



633 nm Red Laser System

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New Broadband Design

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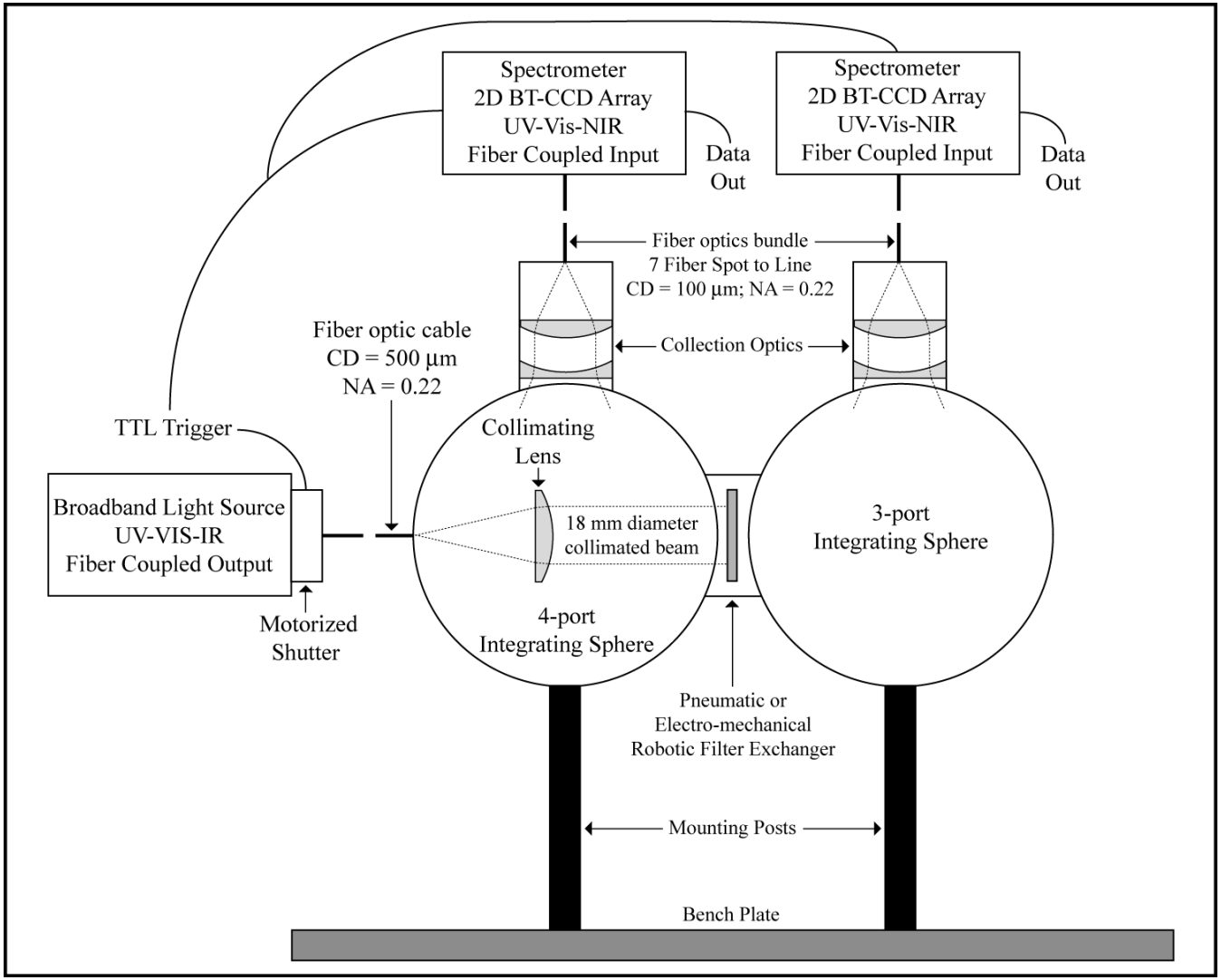
Multiple wavelengths elucidate aerosol composition & properties



Collection Optics

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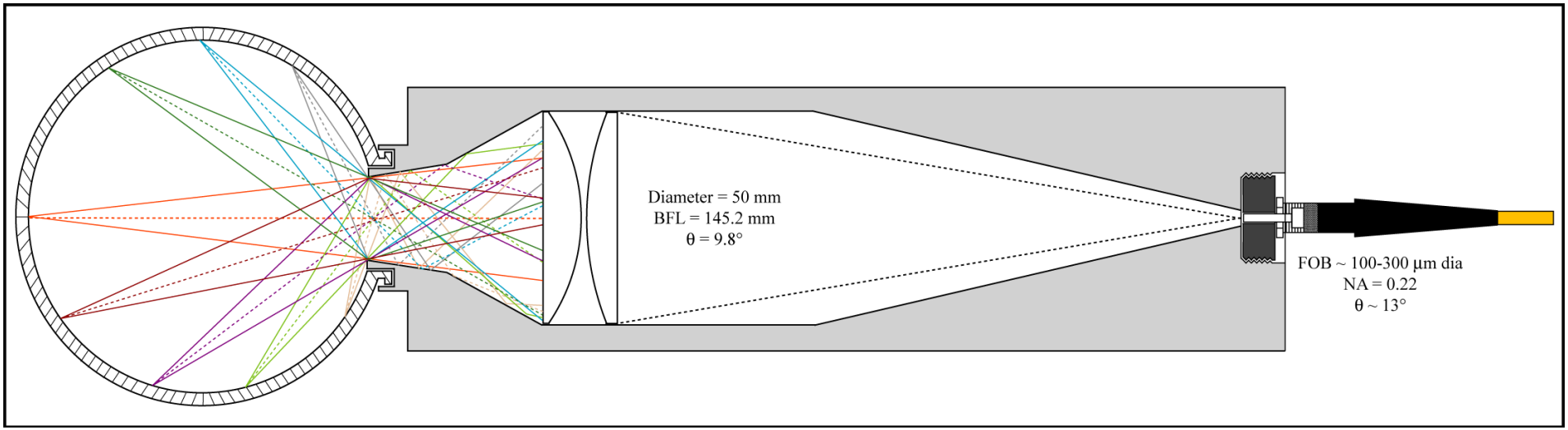

Multi-wavelength System Characteristics

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- System will span the visible spectrum from UV to near-IR.
- Spectral resolution will be selected, can be as little as 1 nm.
- Comparison tests will quantify performance at 633nm (current system).

Status of Development Work

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- Currently refining system design and mathematical model to simulate radiative losses & spectral resolution.
- Next – Test critical components.
- Finalize design, purchase components, assemble system.
- Test and verify new system, establish calibration procedures, compare to a set of previously-analyzed filters.
- Place into operation sometime in 2013.