I will summarize a workshop, sponsored by the NASA Upper Atmosphere Research Program, held in late October 2001 in San Diego to assess in detail the state of spectroscopic parameters available for addressing present and future atmospheric sensing needs. The workshop brought together researchers who monitor the atmosphere using spectroscopic techniques with researchers who perform laboratory molecular spectroscopy. The aim was to (i) review the status of current spectroscopic parameters for atmospheric measurements, (ii) assess the state of laboratory capabilities to yield new, more accurate, and precise molecular parameters, and (iii) prioritize the future spectroscopic needs and communicate these needs to funding agencies and the spectroscopy community. The workshop focused on various spectral wavelengths as well as aerosols and addressed field measurement capabilities and needs and laboratory measurement achievements and capabilities. It was augmented by poster presentations, group discussions, and break out meetings. I will report the workshop conclusions, as well as general recommendations made for the funding of laboratory spectroscopy and atmospheric spectroscopy.

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