Representative papers

* Liou, K. N., 1972: Electromagnetic scattering by arbitrarily oriented ice cylinders. *Appl. Opt.*, 11, 667-674.(The first attempt to model light scattering by ice particles.)
* Liou, K. N., and H. Lahore, 1974: Laser sensing of cloud composition: A backscattered depolarization priciple. *J. Appl. Meteor.*, 13, 257-263. **** (Discover the backscattering depolarization principle to differentiate ice crystal and water droplet. See a review in Sassen 1991, *Bull. Amer. Meteor. Soc*.; CALIPSO, a lidar satellite.)
* Liou, K. N., 1974: Analytic two-stream and four-stream solutions for radiative transfer. *J. Atmos. Sci.*, 31, 1473-1475. **** (Derive the analytic 4-stream solution for radiative transfer for use in radiation and climate parameterization. See Goody and Yung 1989, p. 386. See also Liou et al. (1988) ****)
* Liou, K. N., 1986: Influence of cirrus clouds on weather and climate processes: A global perspective. *Mon. Wea. Rev.*, 114, 1167-1199. **** (Define the role of cirrus clouds in climate; 788 citations.)
* Liou, K. N., and Y. Xue, 1988: Exploration of the remote sounding of infrared cooling rates due to water vapor. *Meteor. Atmos. Phys.*, 38, 131-139. **** (A paper of originality and rigor concerning space remote sensing of heating rates and surface fluxes.)
* Liou, K. N., and S.C. Ou, 1989: The role of cloud microphysical processes in climate: An assessment from a one-dimensional perspective. *J. Geophys. Res.*, 94, 8599-8607. **** (First report on the second indirect effect of aerosol-cloud interaction on precipitation. See IPCC 2001, section 5.3.5; see also Albrecht 1989, *Science*, 9/15, References and Notes #30.)
* Takano, Y., and K.N. Liou, 1989: Radiative transfer in cirrus clouds. I. Single-scattering and optical properties of hexagonal ice crystals. II. Theory of multiple scattering in an anisotropic medium. *J. Atmos. Sci.*, 46, 3-36. **** (Develop a new frontier in light scattering by means of geometric optics; 645 citations.)
* Fu, Q., and K. N. Liou, 1992: On the correlated k-distribution method for radiative transfer in nonhomogeneous atmospheres. *J. Atmos. Sci.*, 49, 2139-2156. **** (An original paper regarding the sorting of spectral absorption lines for use in multiple scattering atmospheres.)
* Fu, Q., and K. N. Liou, 1993: Parameterization of the radiative properties of cirrus clouds. *J. Atmos. Sci.*, 50, 2008-2025. **** (A new approach to parameterize ice cloud radiative properties for use in climate models and remote sensing; 653 citations. See Charlock and Alberta 1996, *Bull. Amer. Meteor. Soc*.; Liu et al. 2008, *Weather and forecast*.)
* Yang, P., and K. N. Liou, 1996: A geometric-optics/integral-equation method for light scattering by nonspherical ice crystals. *Appl. Opt.*, 35, 6568-6584. **** (An innovative paper on the subject of geometric optics for light scattering by ice crystals based on fundamental electromagnetic theories.)
* Liou, K. N., et al., 2008: On the correlation between ice water content and ice crystal size and its application to radiative transfer and general circulation models. *Geophys. Res. Lett.*, 35, L13805, doi:10.1029/2008GL033918. **** (Develop a new approach to determine ice crystal size based on the predicted ice water content for use in climate models.)
* Liou, K. N., et al., 2011: Light absorption and scattering by aggregates: Applications to black carbon and snow grains. *J. Quant. Spectrosc. Radiat. Transfer*, 112, doi:10.1016/j.jqsrt.2011.03.007. **** (Introduce a stochastic parameterization for light absorption by internally mixed BC/dust in snow grains for climate forcing analysis.)

Also, Liou’s text “An Introduction to Atmospheric Radiation (2nd Edition, 2002)” received 2181 citations (Google Scholar, 1/23/2015) and was translated into Chinese (2006) and Japanese (2014).