



Jie Luo

Curriculum Vitæ (January 1, 2019)

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Nationality: Chinese

RESEARCH EXPERIENCE

Changan University *Changan University*
Building Safety Engineering

2012-2016

In March 2015, participated in the vegetation slope protection project of the mentor.

In June 2015, participated in the foundation pit support project of my mentor.

In August 2015, I participated in the national natural fund scientific research project of my teacher – large-scale physical model test of shield tunnel-surrounding rock-building dynamic interaction under ground crack load.

University of Science and Technology of China *University of Science and Technology of China*
2016-present
State key laboratory of fire science

The radiative properties of fire emitted particles (including black carbon and organic carbon).

The variation of microscopic physical properties of fire emitted particles with the atmospheric aging.

Biomass combustion emissions and its climate effects by combining the WRF-chem and remote sensing.

MAIN ACHIEVEMENTS OF THE PAST TWO YEARS

As the calculation of radiative properties of black carbon aggregates is computationally expensive, we applied the machine learning to find the best fit for the relation between radiative properties and morphology.

For black carbon(BC) thickly-coated with brown coatings, we found the absorption of internal mixed BC can be less than that of an external mixture of brown carbon (BrC) and black carbon. From the physical point, we analysed that the absorbing coating can block into the BC, so leads to less absorption, and we named this phenomenon as "sunglass effect".

SKILLS

Experience (*Non-spherical particle calculation, Machine learning, WRF-chem, MODIS products disposing.*),
Computer Languages (*Skilled in use of Matlab and NCL; familiar with Python, Fortran, IDL, C and C++.*),
Tools and Software (*Skilled in Latex, Word, Pycharm and visio; familiar with pov-ray, paraview and CAD.*),

HONORS

National scholarship of Changan University (2014)

National Encouragement scholarship of Changan University (2013,2015)

National scholarship of University of science and technology of China (2018)

PUBLICATIONS

Luo, J., Y. M. Zhang, and Q. X. Zhang (2018a), A model study of aggregates composed of spherical soot monomers with an acentric carbon shell, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 205, 184-195.

Luo, J., Y. M. Zhang, Q. X. Zhang, F. Wang, J. Liu, and J. J. Wang (2018c), Sensitivity analysis of morphology on radiative properties of soot aerosols, *Optics Express*, 26(10), A420-A432.

Luo, J., Y. Zhang, F. Wang, J. Wang, and Q. Zhang (2018d), Applying machine learning to estimate the optical properties of black carbon fractal aggregates, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 215, 1-8.

Luo, J., Zhang, Y., Wang, F., and Zhang, Q.: Effects of brown coatings on the absorption enhancement of black carbon: a numerical investigation, *Atmos. Chem. Phys.*, 18, 16897-16914, 10.5194/acp-18-16897-2018, 2018.