BAIHUIQIAN (VERA) HE, PHD

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RESEARCH INTERESTS

- High-resolution modelling of atmospheric chemistry, with particular focus on traffic-related emissions in urban environment using uEMEP, ADMS-Urban (dispersion model), land-using regression, and EMEP/MSC-W (chemical transport model) to produce new scientific findings and develop mitigation strategies
- Using low-cost sensors and data science tools for high resolution air quality data acquisition and modelling

RESEARCH EXPERIENCE

UKCEH   **Edinburgh, UK**
Atmospheric Model Data Analyst   *Oct 2019 to present*

- Running the atmospheric chemistry transport model EMEP4UK and its local scale model uEMEP for cities in the UK
- Analysing model outputs and validating the results with measurements
- Documenting uEMEP running processes
- Preparing relevant reports and papers (Secondary Organic Aerosols modelling report for DEFRA)

TEACHING AND MENTORING EXPERIENCE

- 2018 to present MSc projects supervisor for the School of Geosciences, the University of Edinburgh
- 2018 to 2020 Environmental Lab Demonstrator for the School of Chemistry, the University of Edinburgh
- 2017 to 2020 Physical Chemistry Demonstrator for the School of Chemistry, the University of Edinburgh

SKILLS

- **Computational:** Programming languages (R, Python and Shell script)
- **GIS:** GIS analysis in arcGIS, QGIS, R, and Python, mapping
- **Modelling:** ADMS-Urban, EMEP, uEMEP, Land-use Regression

PUBLICATIONS

He, B.; Vieno, M; Heal, M.R.; Reis, S. Application of urban-scale EMEP (uEMEP) for the UK [in prep GMD]

He, B.; Heal, M.R.; Reis, S. The effect of railway electrification on railway emissions of Ultrafine Particles in an urban area [in prep]

He, B.; Heal, M.R.; Reis, S. Modelling public health benefits of various emission control options to reduce NO2 concentrations in Guangzhou Environmental Research Communications 2020

He, B.; Heal, M.R.; Reis, S. A hybrid model approach for estimating health burden from NO2 in megacities in China: a case study in Guangzhou Environmental Research Letter 2019, 14, 12

He, B.; Heal, M.R.; Reis, S. Land-Use Regression Modelling of Intra-Urban Air Pollution Variation in China: Current Status and Future Needs. Atmosphere 2018, 9, 134

EDUCATION

- PhD, Atmospheric Chemistry, University of Edinburgh, 2016-2020
- MSc, Environmental Protection and Management, University of Edinburgh, 2014 - 2015
- BSc, Environmental and Sustainable Chemistry, University of Edinburgh, 2012-2014
- BEng, Chemical Engineering, Dalian University of Technology, 2010-2012

AWARDS

- Roche Continents 2019
- Joseph Black Conference oral presentation runner-up prize 2019
- Go Abroad Award 2018
- CSC scholarhip 2016-2019
- Sustainability Awards-Bronze Lab Award 2015

CONFERENCE PRESENTATIONS

- Oral presentation at Joseph Black Conference 2019 Edinburgh, UK
- Oral presentation at the ISES-ISEE 2018 conference Ottawa, Canada
- Mock carbon negotiator at 2018 conference University of Edinburgh, UK
- Facilitator at 2018 Unconference: Environment, Society, and Technology, Imperial College, UK
- Oral presentation at 2017 International Workshop on Open Geographical Modeling Simulation, Nanjing Normal University, China

PAPER REVIEWING

- IEEE access 2020
- Environmental Modelling Software 2018
- Atmospheric Environment 2018