

Losun svifryks frá gatnakerfinu á höfuðborgarsvæðinu: ferlar og líkan

Road dust pollution in Reykjavík: Processes and Modeling

Brian Barr^{1*}, Hrund Ó. Andradóttir², Þröstur Þorsteinsson³ & Sigurður Erlingsson²

¹ MS student, Department of Geology, University of Iceland

² Professor, Faculty of Civil and Environmental Engineering, University of Iceland

² Professor, Faculty of Environment and Natural Resources, University of Iceland

¹ Presentor

Abstract

Particulate matter (PM) emissions from vehicular traffic in Reykjavík is a significant detriment to the air quality of Iceland's Capital Region. This problem is largely due to the widespread use of studded tires, but other factors contribute as well, such as speed limits, brake dust, traffic patterns, meteorological conditions, and wintertime road-maintenance. Research and data both qualifying and quantifying this problem exists, however, little research exists on how the available information can be used to make predictions about PM pollution. Such predictions can be used to test mitigation scenarios and make alleviating policy recommendations to Icelandic government officials. To address this issue, this project utilizes Non-Exhaust Road Traffic Induced Particle emission modelling, also known as the NORTRIP model. NORTRIP was developed in collaboration with various Nordic government agencies and universities to simulate sources of non-exhaust vehicular emissions, their accumulation on road surface, and their eventual suspension in the atmosphere. To date, the model has been utilized to make pollution simulations with varying degrees of success in Denmark, Finland, Norway, and Sweden. The aim of this project is to apply the NORTRIP model to Reykjavík in order to better understand vehicular PM pollution, as well as potentially promote policy recommendations on the use of studded tires and speed limits in Iceland. Additionally, this project will seek to include a mapping aspect in order to focus on areas in the Capital Region that may be of particularly high concern. Preliminary results from the model will be presented and discussed.