GC34A-04 Arctic Cities and Climate Change: A Geographic Impact Assessment (Invited)

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Arctic climate change is a concern for the engineering community, land-use planners and policy makers as it may have significant impacts on socio-economic development and human activities in the northern regions. A warmer climate has potential for a series of positive economic effects, such as development of maritime transportation, enhanced agricultural production and decrease in energy consumption. However, these potential benefits may be outwaited by negative impacts related to transportation accessibility and stability of existing infrastructure, especially in permafrost regions. Compared with the Arctic zones of other countries, the Russian Arctic is characterized by higher population, greater industrial development and urbanization. Arctic urban areas and associated industrial sites are the location of some of intense interaction between man and nature. However, while there is considerable research on various aspects of Arctic climate change impacts on human society, few address effects on Arctic cities and their related industries. This presentation overviews potential climate-change impacts on Russian urban environments in the Arctic and discusses methodology for addressing complex interactions between climatic, permafrost and socio-economic systems at the range of geographical scales. We also provide a geographic assessment of selected positive and negative climate change impacts affecting several diverse Russian Arctic cities.

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