

ISSUE: 05. OPERATIONAL APPROACHES, EQUIPMENT AND PRODUCTS FOR WINTER CONDITIONS

SUB-ISSUE: Snow melting methods

Session: 07/02/2014 (08:30 - 10:00 h) **Poster:** 05/02/2014 (09:30 - 12:30 h)

Room: C

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Presentation title:

GROUND-SOURCE HEAT PIPE SNOW-MELTING SYSTEMS IN JAPAN

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Summary:

There are many types of ground thermal energy system to melt down the snow of the road pavement which remains even after the snow removal, in Japan. Some of them are; Direct Circulating Pipe (DCP) type, Ground Source Heat Pump (GSHP) type and Heat Pipe (HP) type. Ground thermal energy is different from the geothermal energy in which heat pump system is placed at a shallower level of less than 200m, from the ground level. DCP type directly uses ground thermal energy through the heat radiating pipe laid beneath the pavement and intercepting cooling water towards the boreholes or wells. Although DCP and GSHP types use ground thermal energy, it needs electric power for heating pump, circulating water pump and controlling the units. On the other hand HP type does not need electricity at all. This paper is mainly focused on the HP type only.

