## New Earth-space infrastructures enable full-scale monitoring capability

E. Tanskanen, T. Raita, J. Tammi, J. Pulliainen, H. Koivula, T. Ulich, R. Hynönen, I. Kukkonen and A. Korja

Earth-Space Research Ecosystem (E2S @FIRI road map) will combine measurements from atmosphere to near-Earth and distant space, and thus enable resolving how the Arctic space environment change over the seasons, years, decades and centuries.

Flexible instrument network FLEX-EPOS of FIRI/FIN-EPOS and ESFRI/EPOS will create pool of instruments to examine impact of magnetic, seismic and geodetic hazards.

Earth-Space Research Ecosystem E2S			
1010 1			
10 <sup>12</sup> km	Interstellar		
10 <sup>9</sup> km	Sun	Solar storms, flares	<b>*</b>
10 <sup>6</sup> km	Solar wind	Radio disturbances	<b>U</b>
10 <sup>5</sup> km	Magnetosphere	<b>S</b> ^	
10 <sup>3</sup> km	lonosphere	Aurora	
50 km	Mesosphere	Magnetic environment	
15 km	Statosphere	CO2, NOx, CH4	
10 km	Troposphere	* * * * * * Radio propagation	
117	Cryosphere	* * ***** Carbon cycle	
	Ground	Water cycle	

