



## **Tree rings, solar radiation and ice cover of the Barents sea**

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Intercomparisons of the Kola Peninsula tree-ring records, ice cover of the Barents sea and sea and surface temperatures have been made. Tree-ring series over the last 100 years showed a highly significant correlation with the sea surface temperatures and ice cover ( $r=-0.57$ ,  $p<0.05$ ). It should be noted that the correlation between the tree-ring widths and local temperatures was not so high. We suppose that a possible reason seems to be the prevailing influence of solar irradiance and their UV components on tree growth in the Kola North. It is known that solar variability and fluctuations of solar irradiance in the UV band of the spectrum has increased over the last decades. In addition, there are frequent cases of total ozone content depletions (or so-called ozone mini-holes) resulting in increased UV-B. The recent studies demonstrate that many boreal and subarctic plants have increased susceptibility to UV-B radiation. An indirect confirmation of the hypothesis proposed is a close relationship between solar total irradiance and global sea surface temperature (Reid, 2000). The results of spectral MTM-analysis also revealed periodicities close to the solar cycles in the ice cover and tree-ring records. These results confirm the above-mentioned interpretation.