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Theme: Special Sessions

Session: TuG2 - Economic effects of climate change on fisheries 2

Title: **An integrated study of possible economic effects of global warming on the Barents Sea cod fisheries**

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Abstract: A number of simulations have been carried out to study different management scenarios in the Barents Sea cod fisheries when implementing physical and biological effects of global warming. A regional representation of the IPCC SPRES B2 scenario (world region OECD90) has been obtained through the REMO5.1 model. Water temperatures and plankton biomasses are calculated by the SinMod model, employing the REMO5.1 results. This study therefore represents a fully integrated model project, linking the global circulation model to the Barents Sea fisheries through regional downscaling for the investigated area. The presence of significant dynamic systems represents a major difficulty in isolating the global warming effects from the natural variations on all levels. One natural fluctuating factor, namely the occasional inflow of herring into the Barents Sea, is represented stochastically, while the effects of choice of management regimes are studied by selecting six possible management scenarios. The study seems however to support earlier study, claiming that the choice of management regimes potentially will have a greater impact on the biological and economic performance of the Barents Sea system when assuming the system to preserve its basic composition. Significant shifts in ecosystem structure as in the case of a high degree of alien species are not considered.