

## Intruduction to Stratospheric Processes and their role on Climate (SPARC)

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<http://www.ics.nara-wu.ac.jp/lab/ozonogroup/index.html>

This talk gives an overview of the research project Stratospheric Processes and their Role in Climate (SPARC) led by The World Climate Research Programme (WCRP).

One of the major issue of SPARC is chemical and dynamical coupling.

The scientific scope of SPARC is as follows;

(see at <http://www.atmosp.physics.utoronto.ca/SPARC/initiativesNEW2005.html>)

### 1 - Climate-Chemistry Interactions

o How will stratospheric ozone and other constituents evolve?

o How will changes in stratospheric composition affect climate?

o What are the links between changes in stratospheric ozone, UV radiation and tropospheric chemistry?

### 2 - Detection, Attribution, and Prediction of Stratospheric Change

o What are the past changes and variations in the stratosphere?

o How well can we explain past changes in terms of natural and anthropogenic effects?

o How do we expect the stratosphere to evolve in the future, and what confidence do we have in those predictions?

### 3 - Stratosphere-Troposphere Dynamical Coupling

o What is the role of dynamical and radiative coupling with the stratosphere in extended-range tropospheric weather forecasting and determining long-term trends in tropospheric climate?

o By what mechanisms do the stratosphere and troposphere act as a coupled system?

This talk involves topics of recent activities of SPARC, focusing cross-cutting issues with IGBP in particular, and introduces some related plans such as PANSY, SOWER, SOLARIS and AC&C. New movement of reorganization in Japanese SPARC community is also reviewed.