Atmospheric dynamics Research InfraStructure in Europe: The ARISE project

Authors

Project Impacts
1) to improve the representation of gravity waves in stratosphere-resolving climate models, crucial to estimating the impact of stratospheric climate forcing on the troposphere,
2) to monitor climate-related phenomena such as severe weather, thunderstorms and sudden stratospheric warmings, over large time periods, in order to characterise their intensity and evolution over time in relation with climate change,
3) to provide a near-real time and continuous monitoring of natural hazards such as large volcanic eruptions, cyclones, avalanches, and meteors.

Synergy between the three 3D observations of the atmospheric dynamics

ARISE collaborative work

GEOFON

ARISE observational campaigns

ARISE collaborative work

Observing airglow temperature

Modeling EGWAP

Differences between EGWAP temperature model and lidar measurements versus altitude between 2000 and 2005. Error distribution (5-95%)

3D observatories of the atmospheric dynamics

<table>
<thead>
<tr>
<th>Infra Sound</th>
<th>Lidar</th>
<th>Mesosphere</th>
<th>Stratosphere</th>
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<td>CTBT and national networks</td>
<td>OHP Lidar, Ionospheric</td>
<td>NDACC - Lidar</td>
<td>NDACC - Airglow layer</td>
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ARISE observation campaigns: to start the collaborative work

ARISE collaborative work

Time-space scales and related observations

- Natural and human-induced disasters
- Improving weather forecasting
- Understanding, predicting, climate change

References:

Press Releases: How the bomb could help us predict next month’s weather Data: 21 September 2012 University of Reading

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http://arise-project.eu