

Auroras Now!

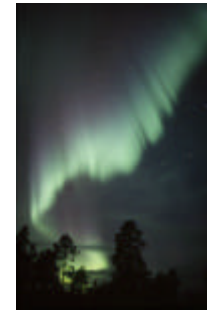
A Space Weather Service for general public and industrial users



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Auroras Now! Services

- Auroral monitor for hotels in Lapland
- Auroral alarms for general public
- GIC alarms for industrial users



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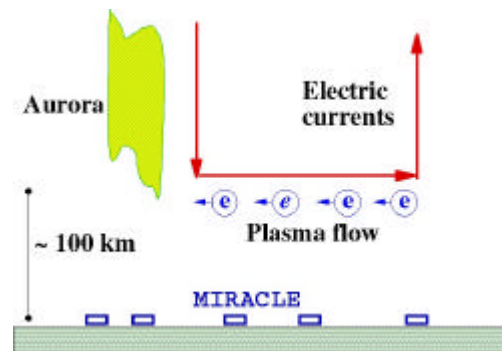
Instrumentation

- Magnetometer - Ionospheric Radars - Allsky Cameras - Large Experiment
- MLAT 55-75
- ~ 2 h MLT
- time resolution 10-20 s



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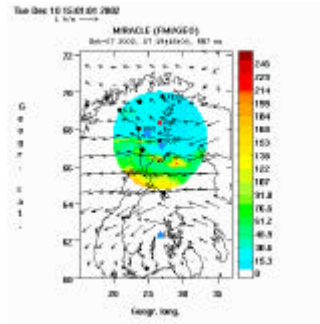
Observations



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Monitoring the auroral activity

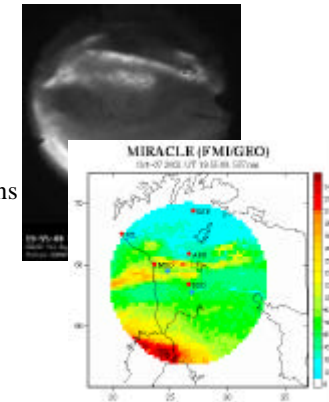
- ASC at Sodankylä geophysical observatory (real-time data)
- Blue marks: Hotel locations
- Arrows: Ionospheric equivalent currents



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Raw data -> Product (auroras)

- Magnetic field data: auroral alarms
- Mapped ASC images
- Cloudiness predictions
- Automatic search of auroral periods for animations



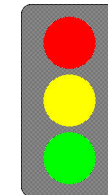
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Web-pages for the hotels

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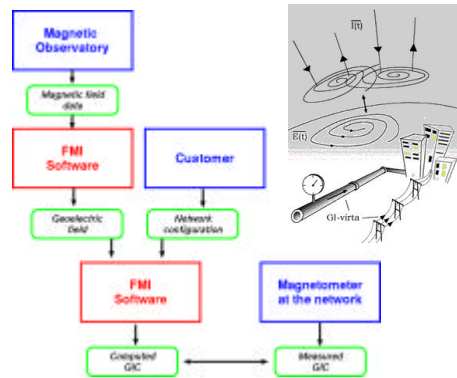
Auroral alarms

- Based on dH/dt recorded at MLAT 57
- Threshold 3nT/10 sec, resolution 1h
- Comparisons with ASC images
 - 77 % alarms associated with auroras (cloudy nights omitted)
 - 79 % auroral nights (> 2h auroras) associated with alarm
- Comparisons with K-index
 - 73 % alarms associated with $K \geq 5$ (during following 24 h)
 - 74 % $K \geq 5$ preceded by alarms



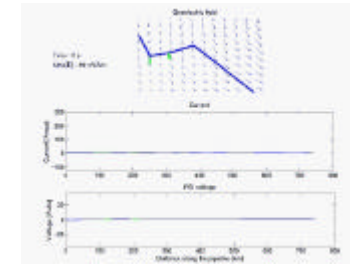
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Raw data -> Product (GIC)



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Modeling GIC



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Consortium

Service providers:



Subcontractors:



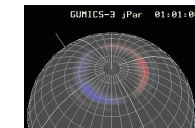
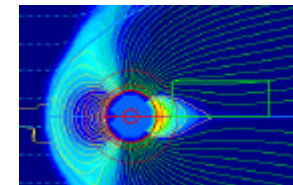
Customers:



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Summary

- Nowcasting system
- Based on well established algorithms
- Systematic evaluation of the products with reference observations
- Forecasting:
 - long time series of observations-> “statistical predictions
 - MHD simulations-> more knowledge about Solar-Terrestrial coupling



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