

The role of soil moisture initialization in seasonal forecasting

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Acknowledgements

GOAPP

Global Ocean-Atmosphere
Prediction and Predictability



Canadian Foundation for Climate
and Atmospheric Sciences (CFCAS)

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du climat et de l'atmosphère (FCSCA)

Outline

- Background and rationale
- Research objectives
- Preliminary Results

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- Better understanding of the *land* surface initial conditions could help in seasonal and sub- seasonal climate prediction
- Very little "real-time" land surface data available for assimilation
- Current forecasts initialized with climatological values

Research Objectives

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- Case study of 2001-2002 prairie drought predictability

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- Pressure, LW radiation, humidity and wind velocity are the original reanalysis fields

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- Period of interest extends from 1979-2007

Variables of interest

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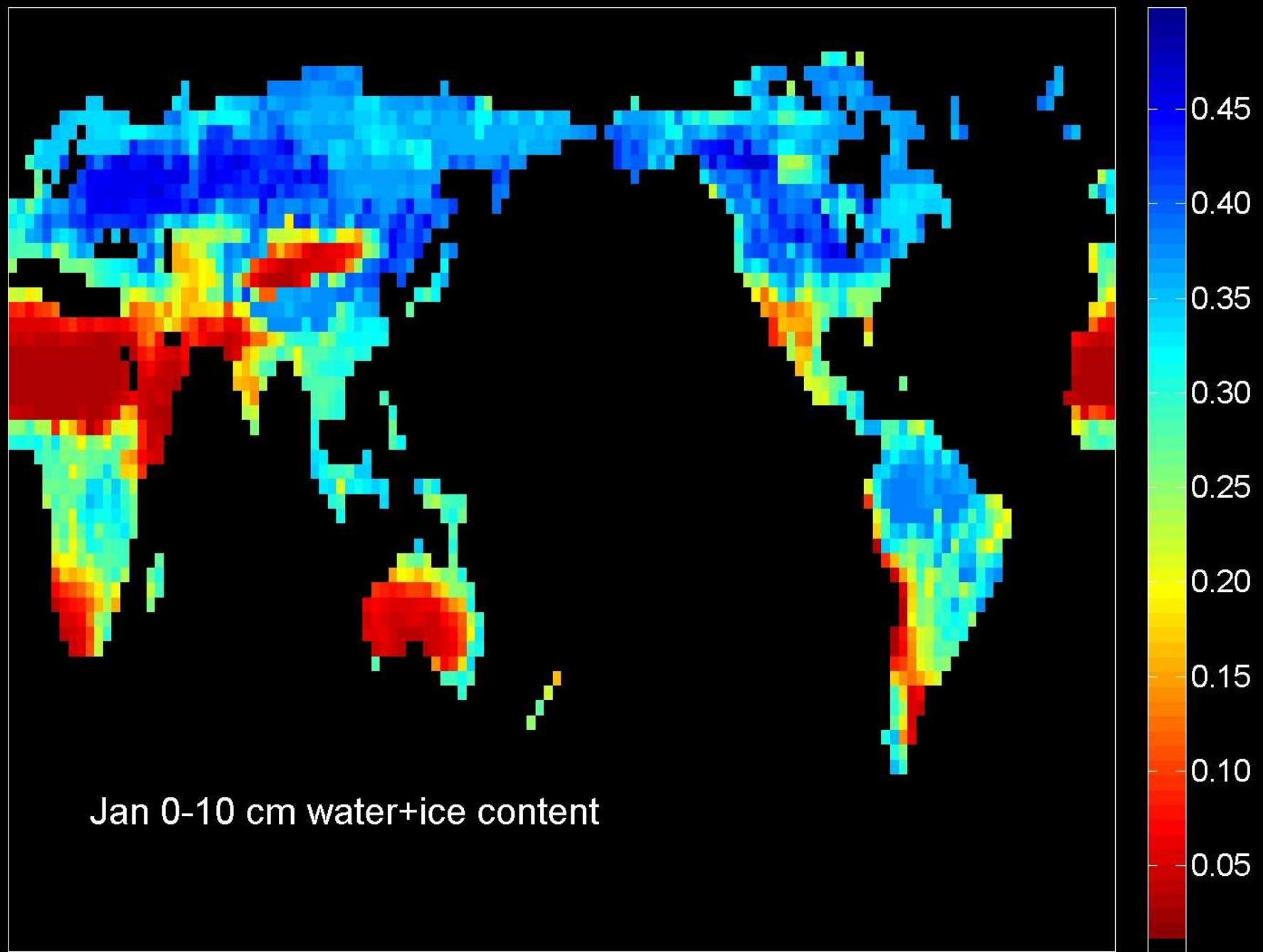
- Soil temperature, water content, ice content (3 layers)

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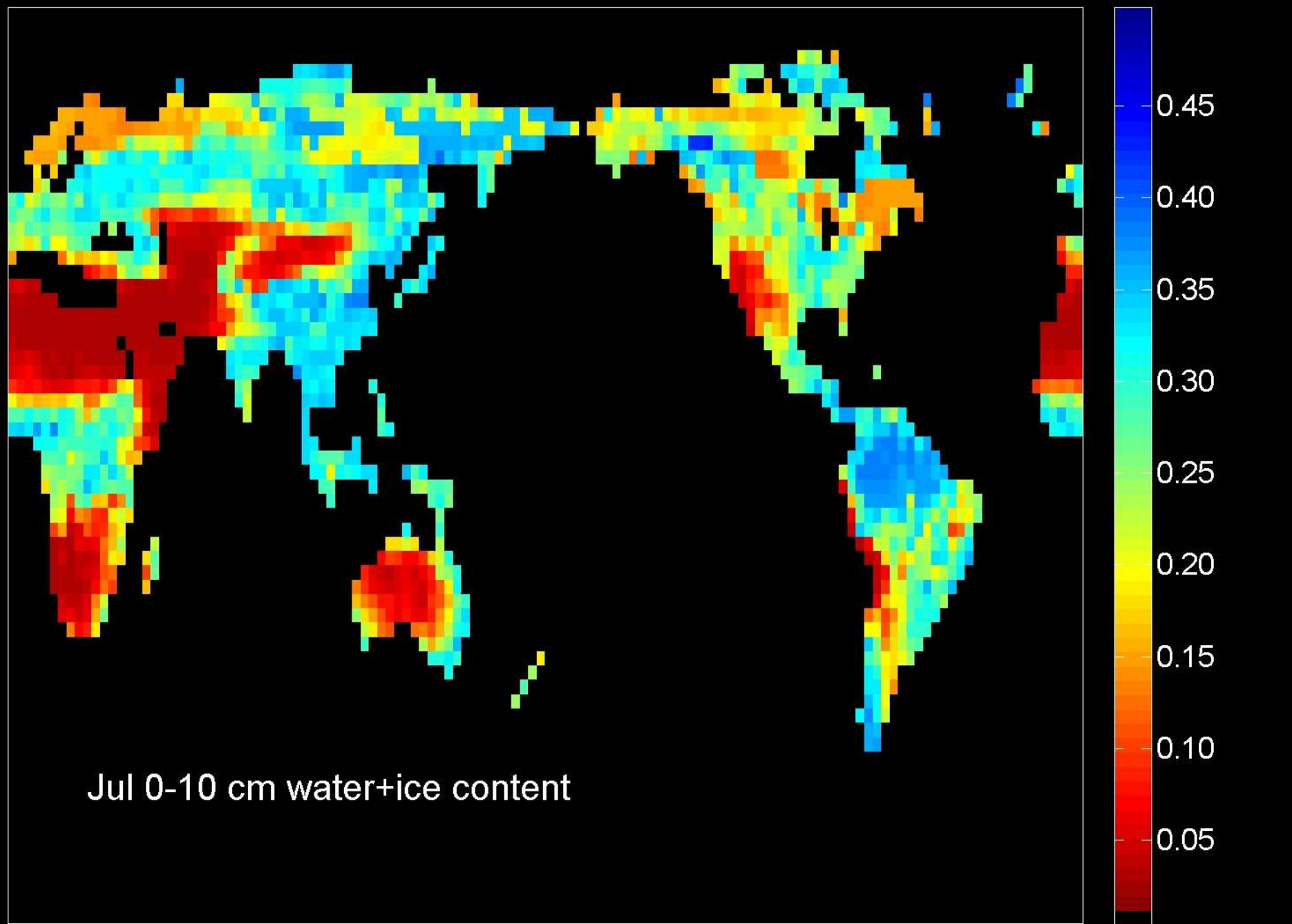
- Soil temperature, water content, ice content (3 layers)
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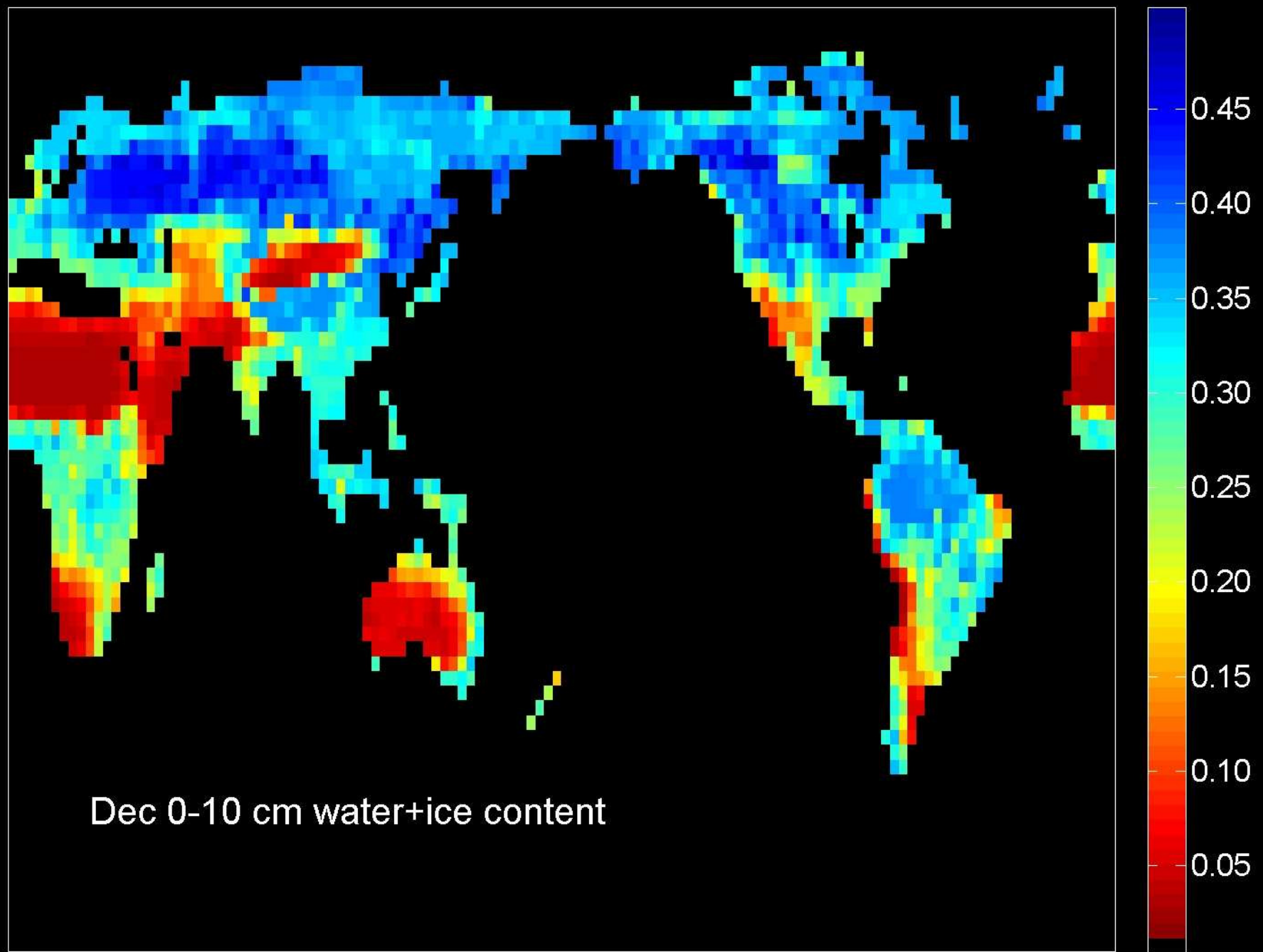
Variables of interest

- Soil temperature, water content, ice content (3 layers)
- Snow depth, density, liquid water storage, albedo, temperature
- Canopy temperature, water & ice storage

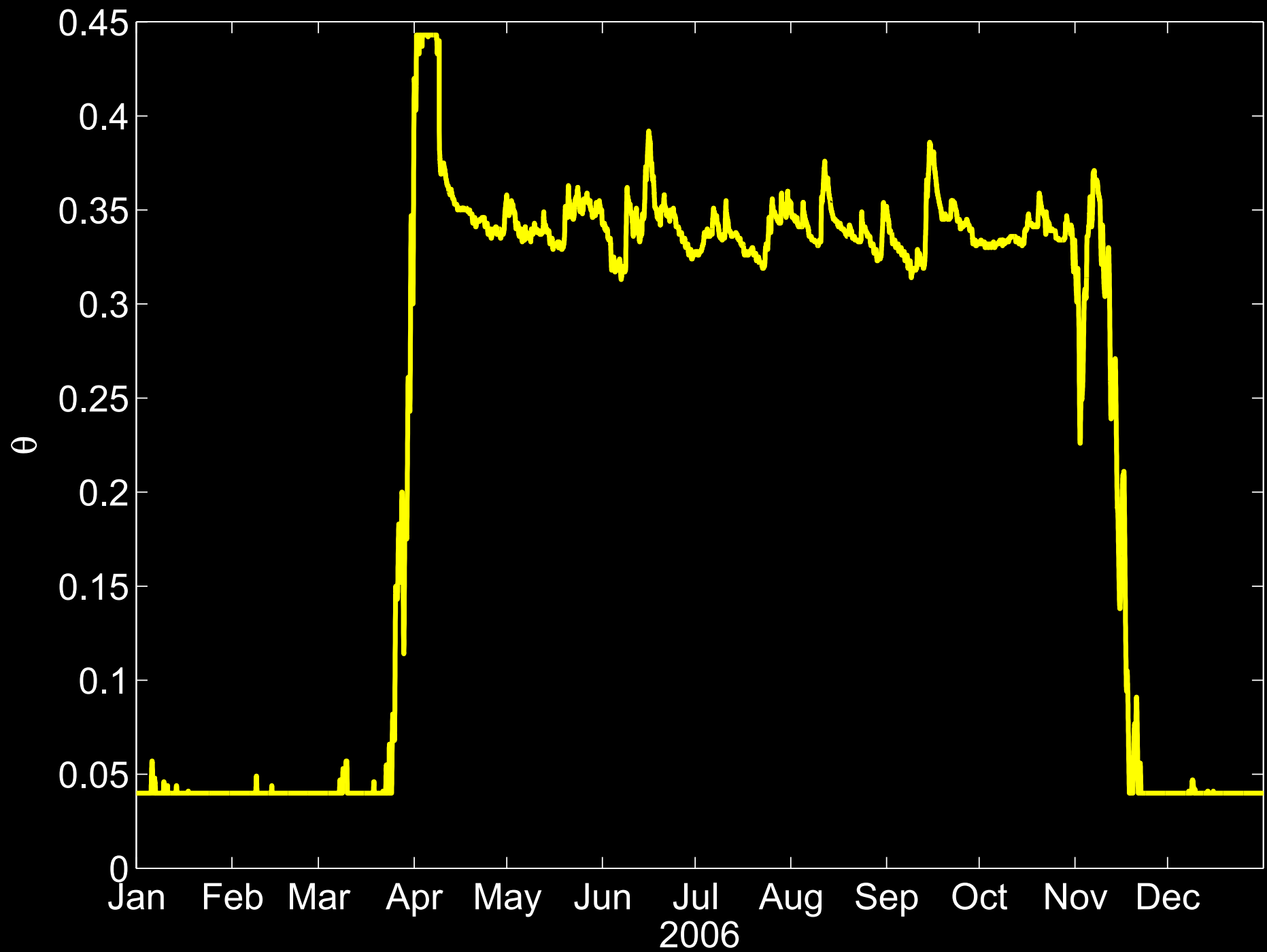


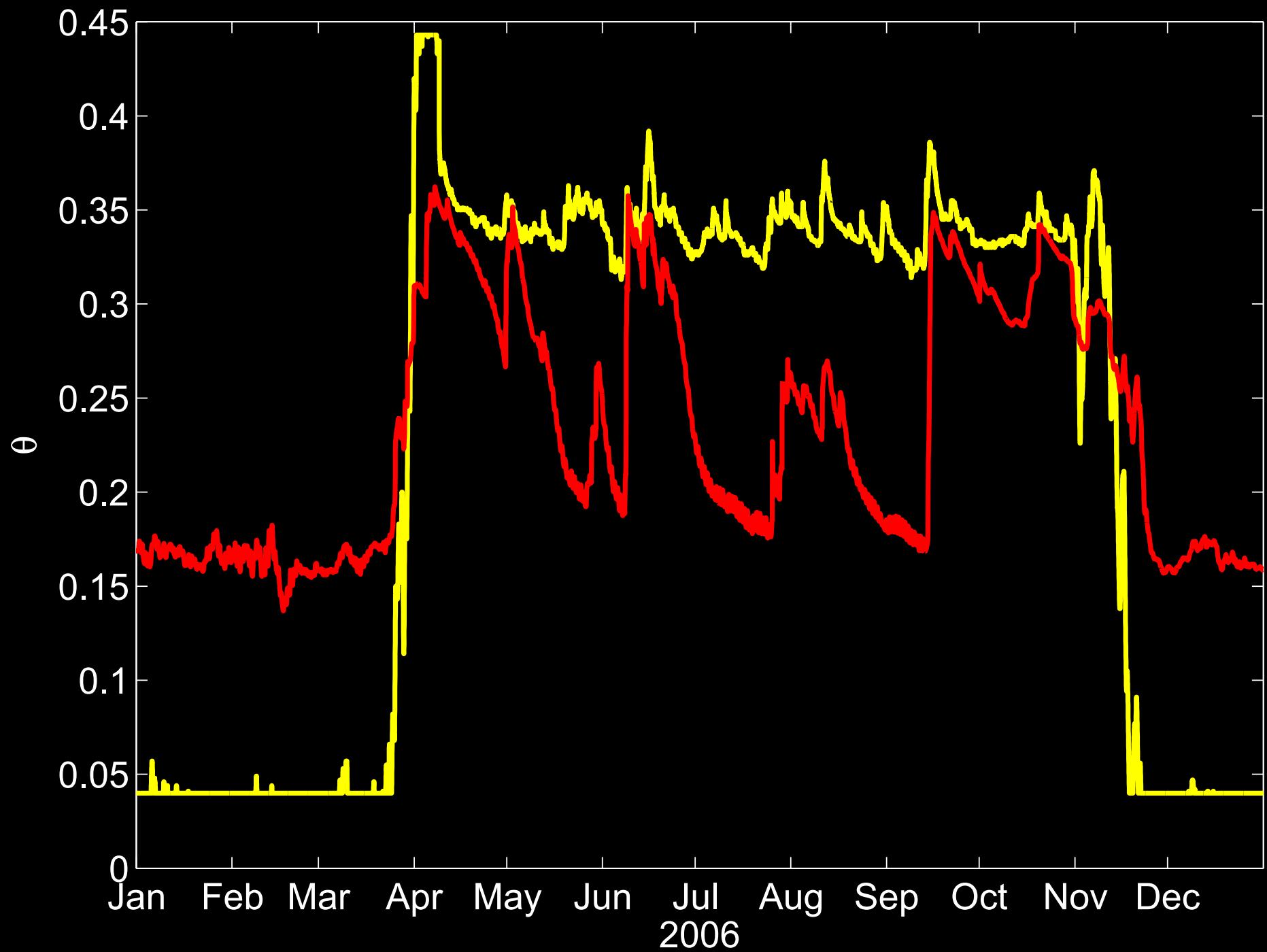
Jan 0-10 cm water+ice content

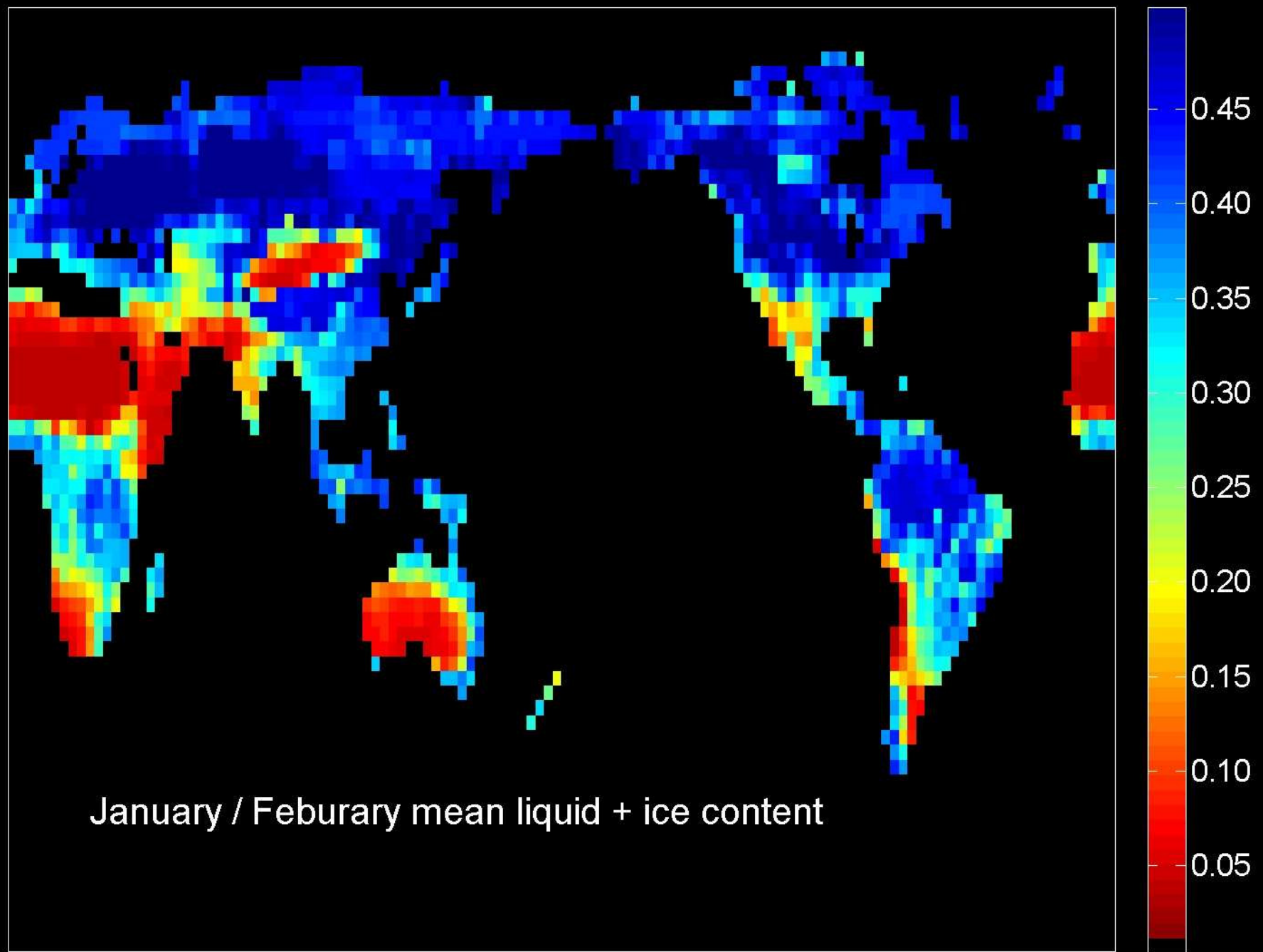




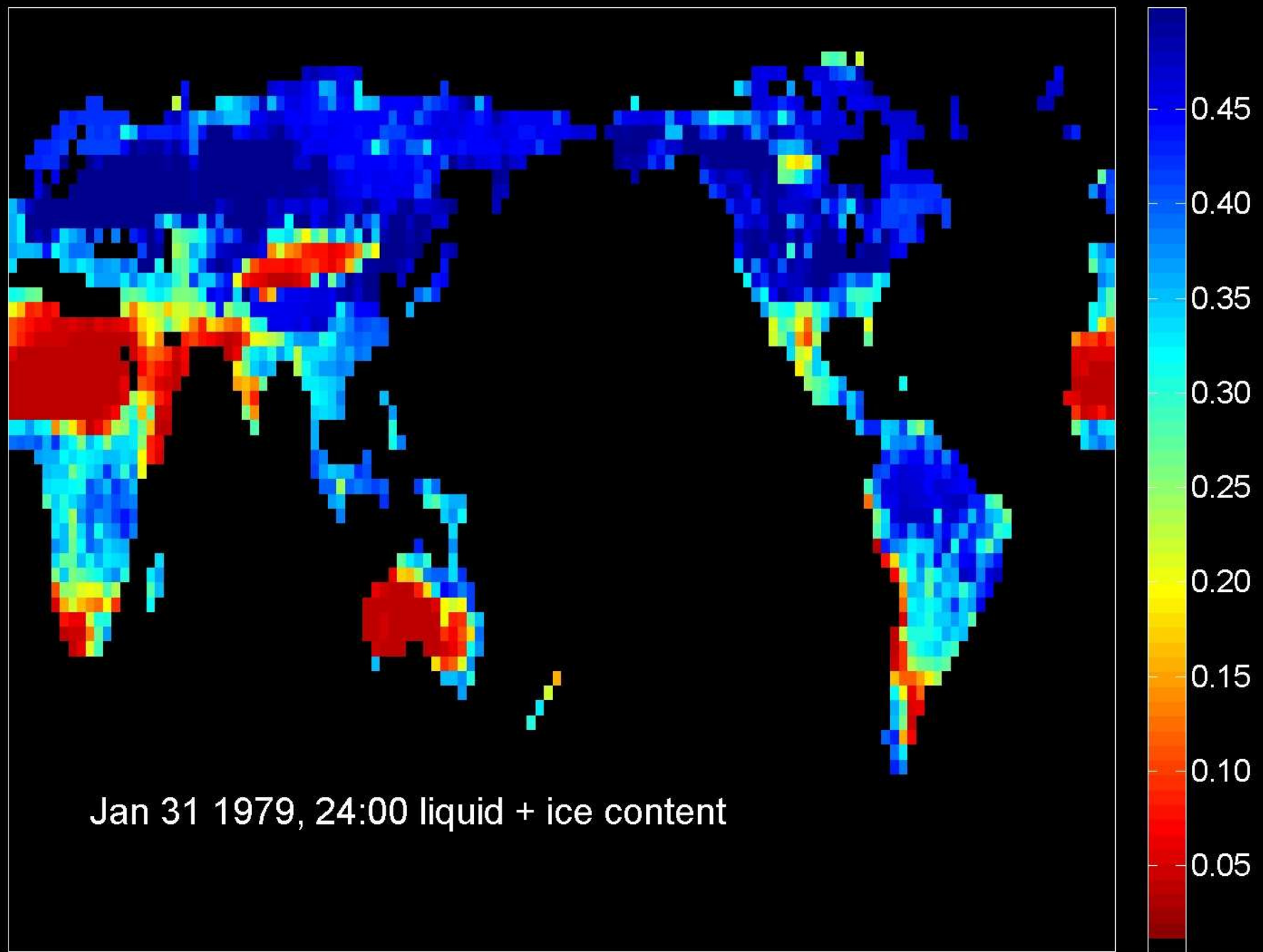
Dec 0-10 cm water+ice content

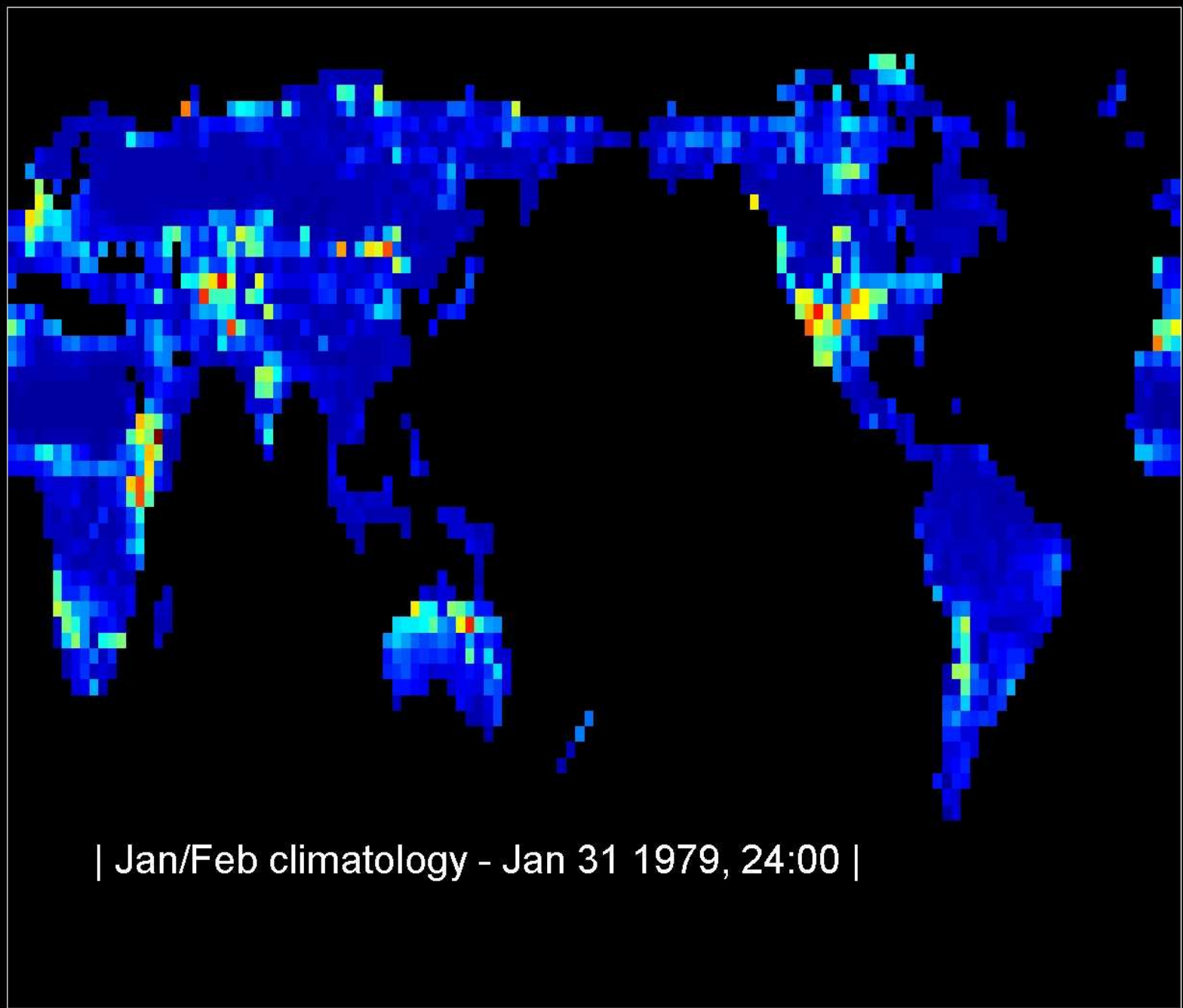




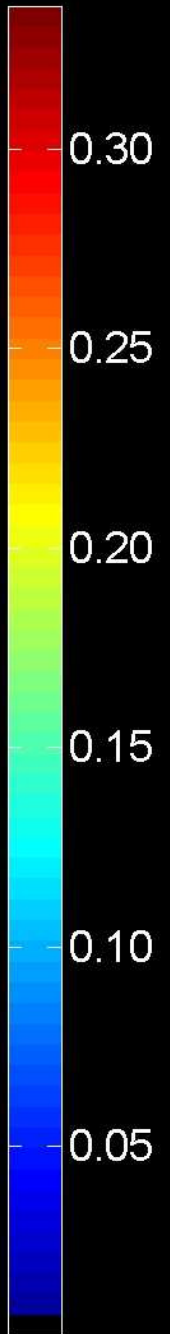


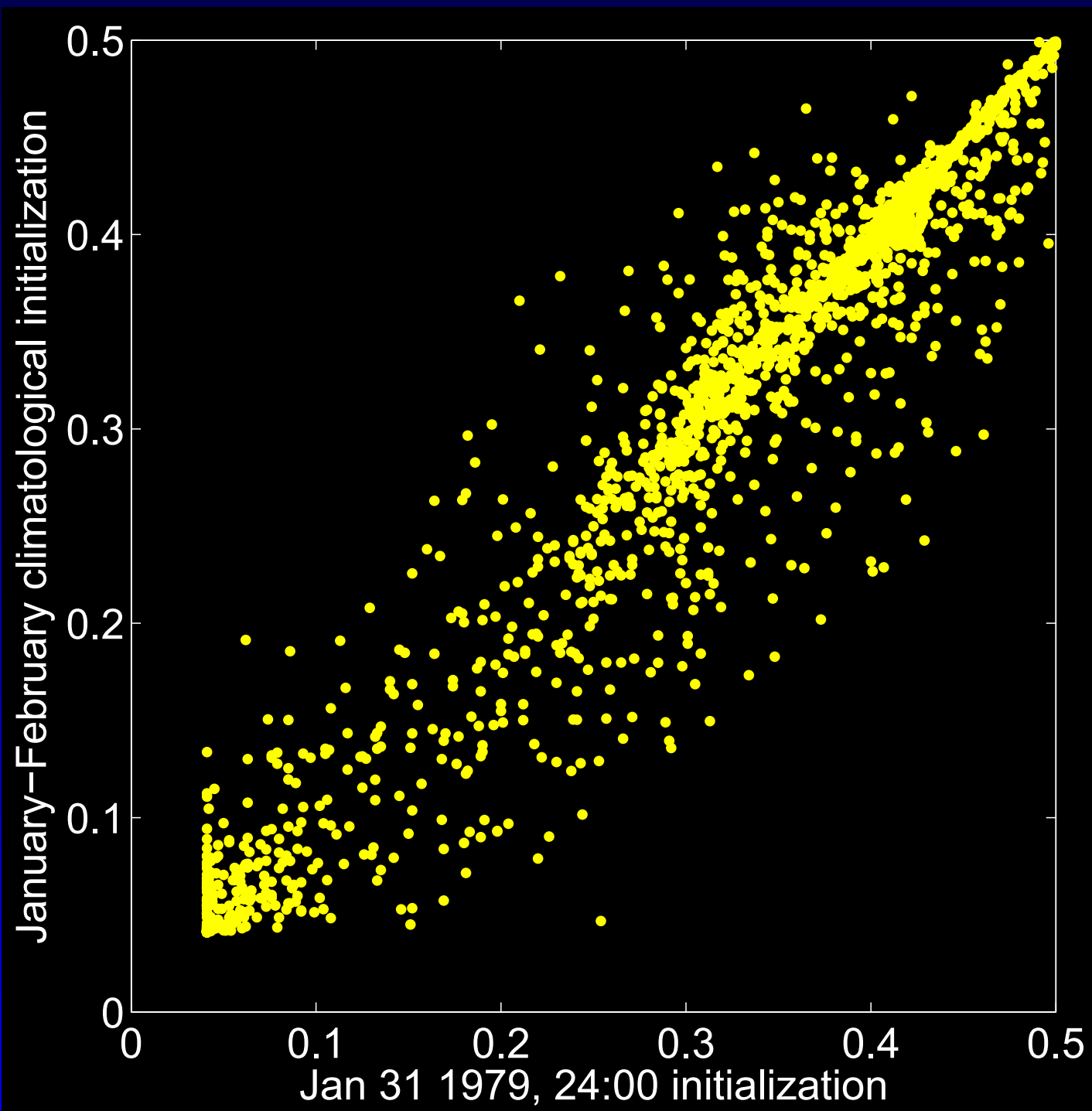
January / February mean liquid + ice content





| Jan/Feb climatology - Jan 31 1979, 24:00 |





Climatology initialization – beginning of month initialization

