

Longterm Dynamics of Sea Surface Temperature (SST) in Europe between 1982 and 2018

Exploring the new TIMELINE AVHRR SST Product

Philipp Reiners, Stefanie Holzwarth, Sarah Asam
At IGARSS 2022

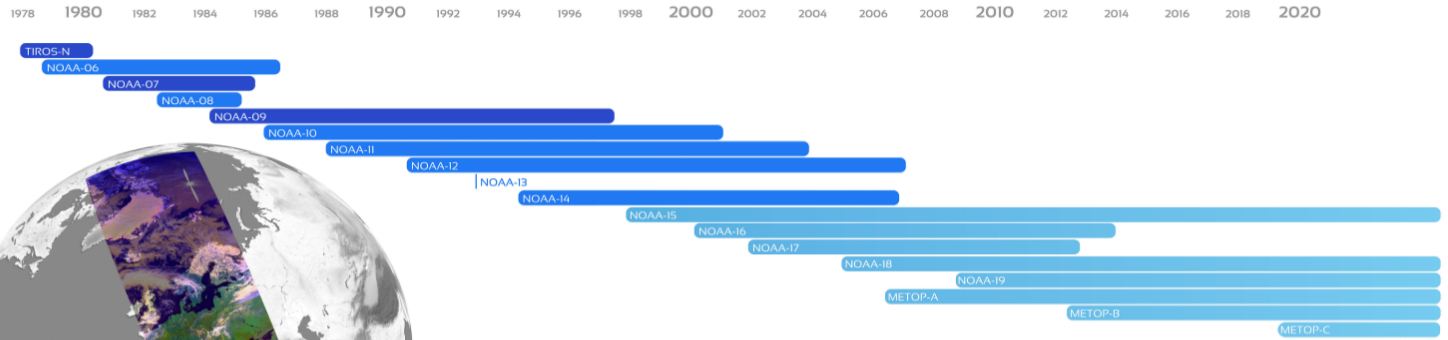


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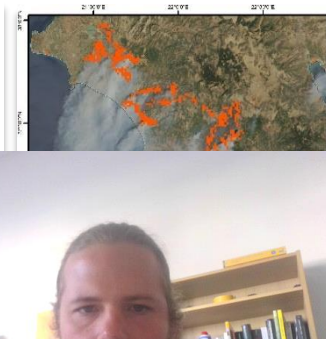
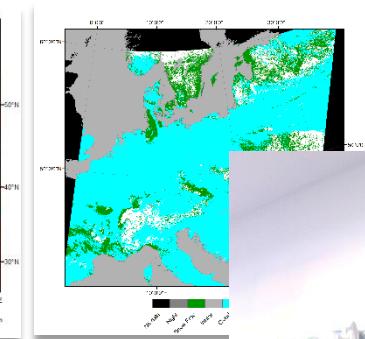
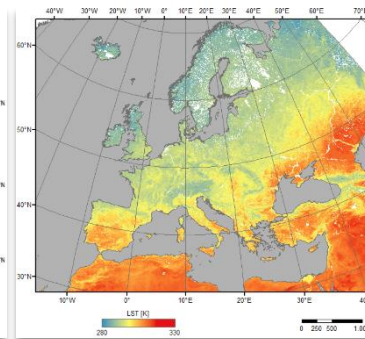
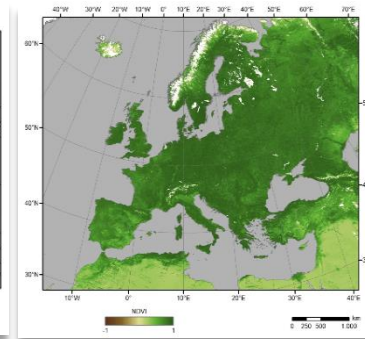
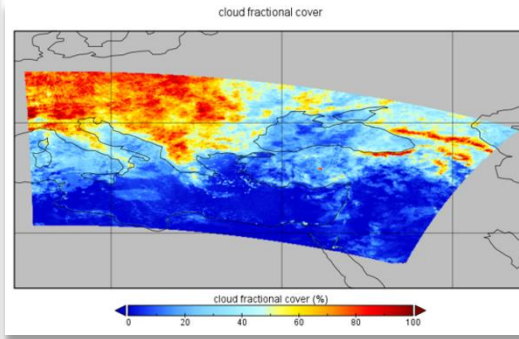
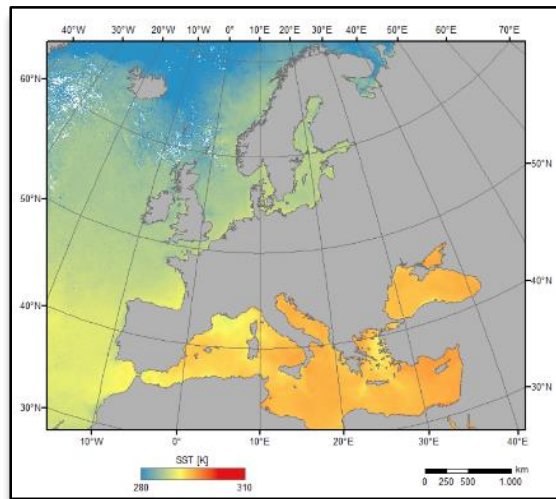


TIMELINE: Mapping of geophysical Land, Ocean and Atmosphere Products over Europe from 40 Years of AVHRR Data

- Harmonised Time Series from AVHRR Data from 1982
- Local Area Coverage (LAC) Data (1 km resolution)

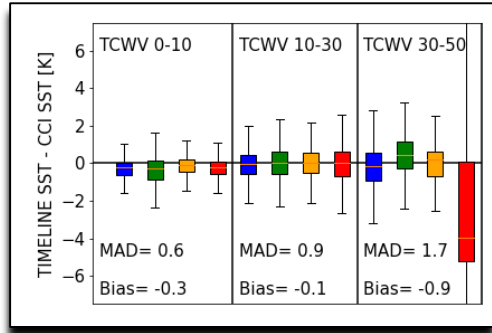


AVHRR Sensor Generations: 1 2 3

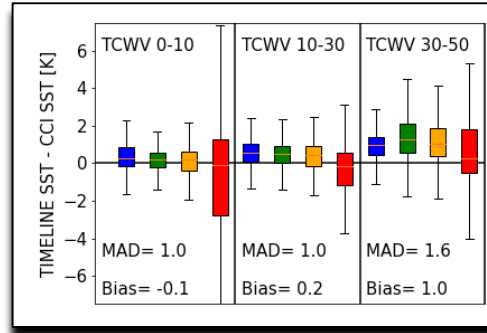


Comparison between the TIMELINE and ESA CCI SST Products

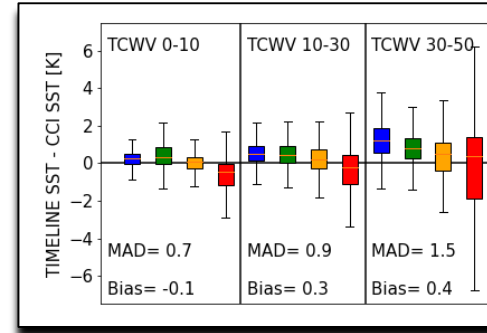
01-07 – 10-07-1985



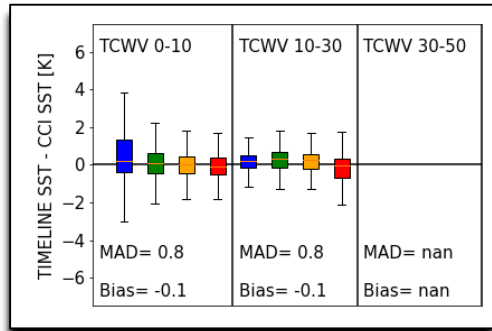
01-07 – 10-07-1995



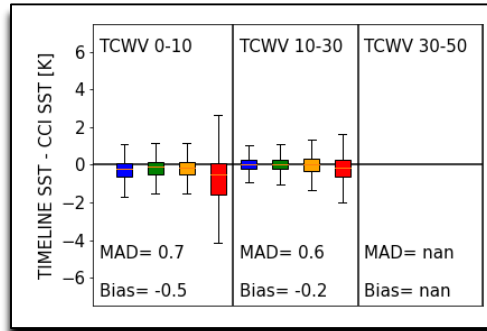
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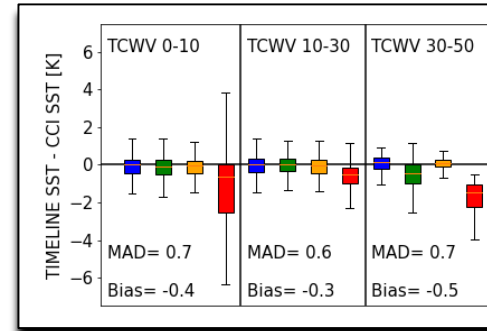
01-01 – 10-01-1990



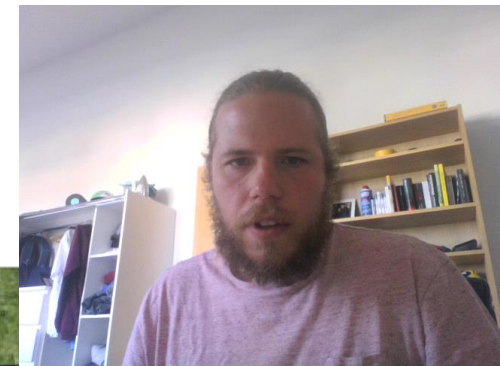
01-01 – 10-01-2000



01-01 – 10-01-2010

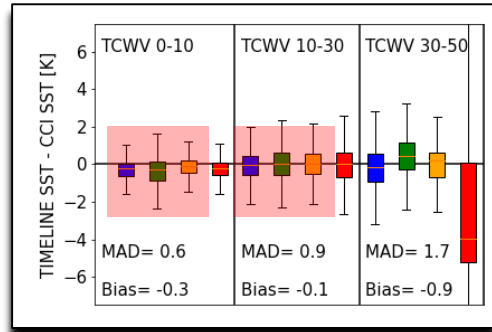


- VA 0-10
- VA 10-30
- VA 30-50
- VA > 50

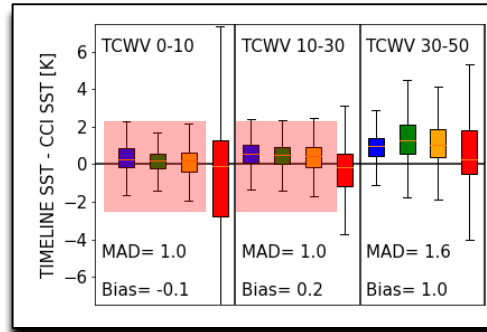


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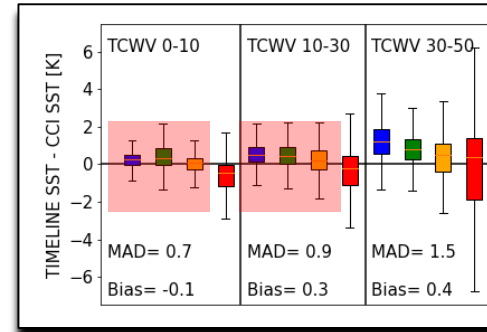
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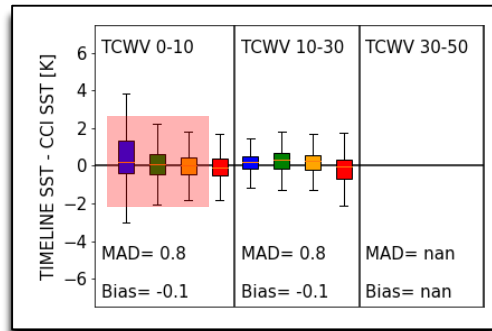
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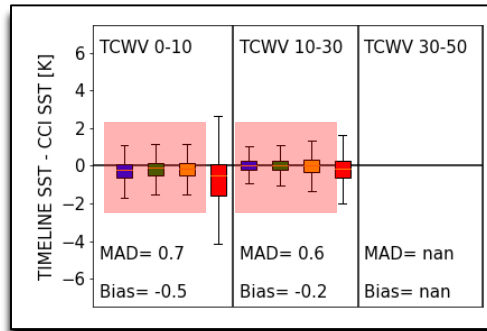
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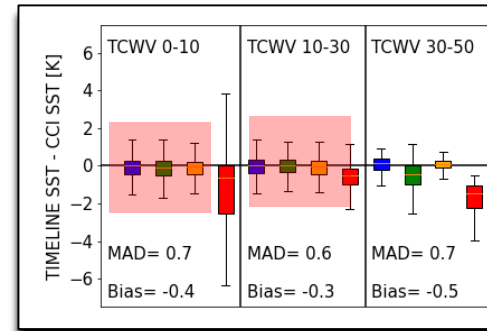
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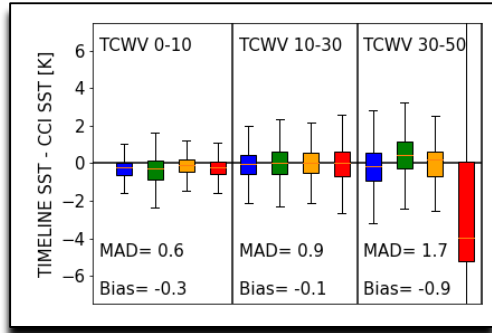


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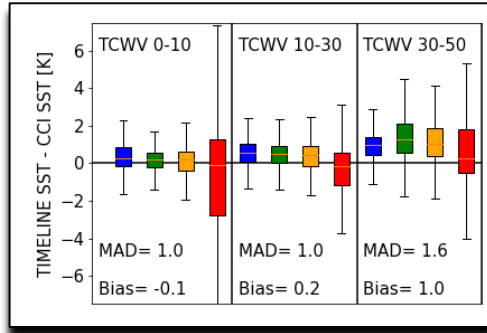


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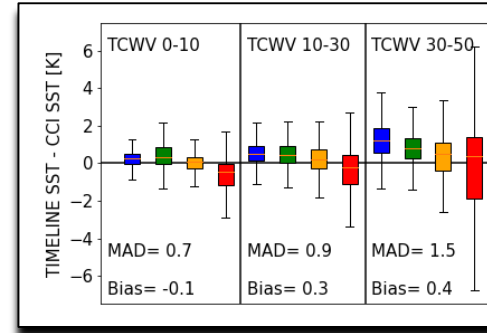
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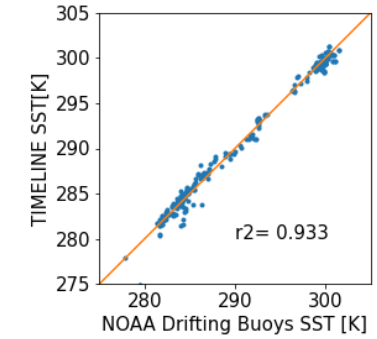
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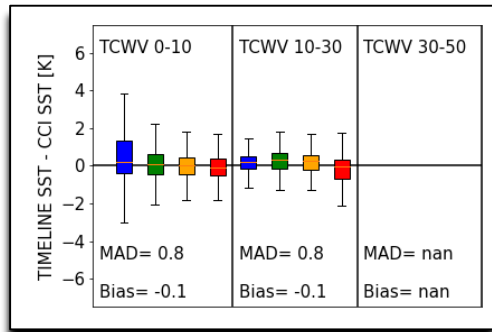
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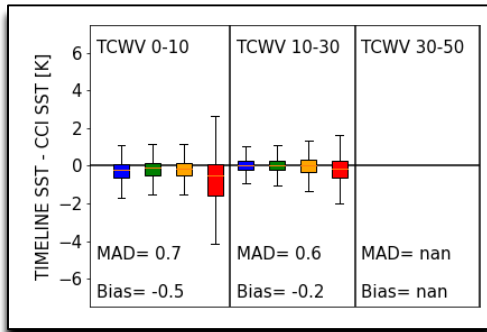
TIMELINE vs. NOAA Buoy SST



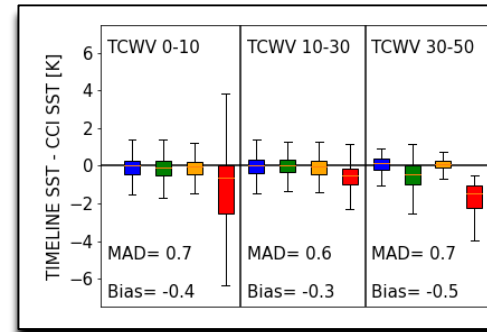
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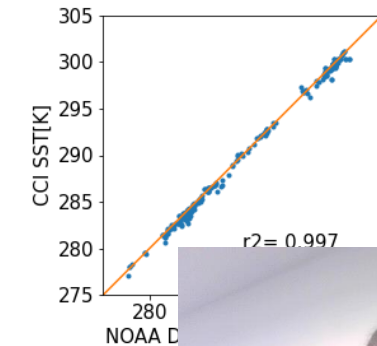
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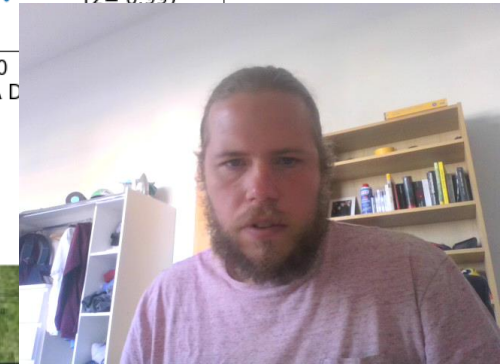
01-01 – 10-01-2010



CCI vs. NOAA Buoy SST

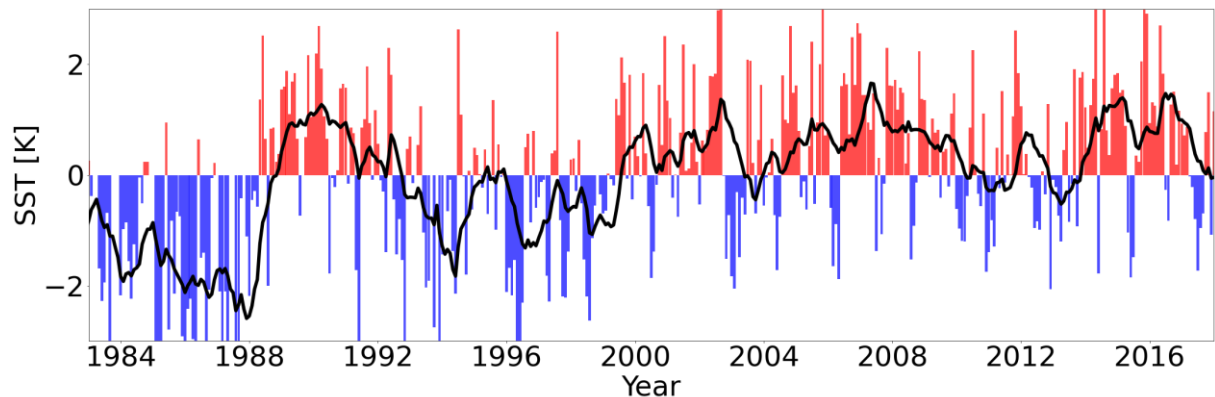


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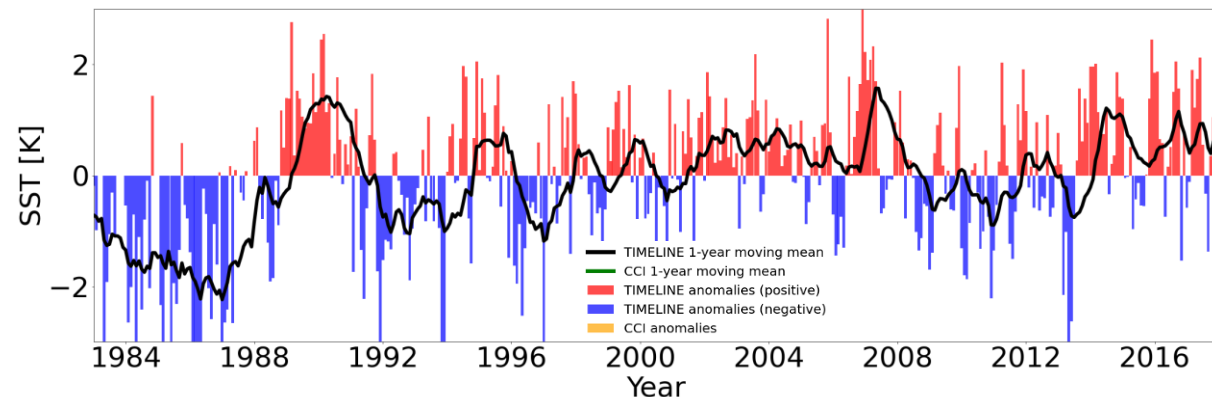


Longterm Anomalies over the North Sea and Baltic Sea

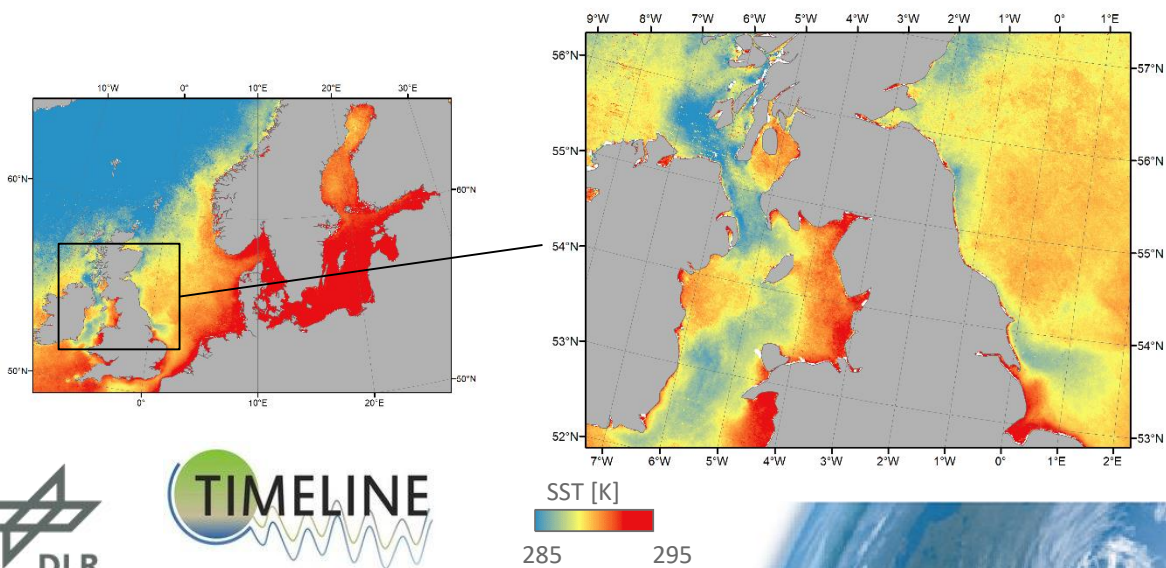
SST Anomalies over the Baltic Sea



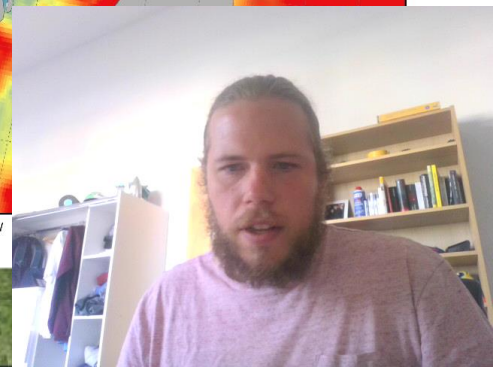
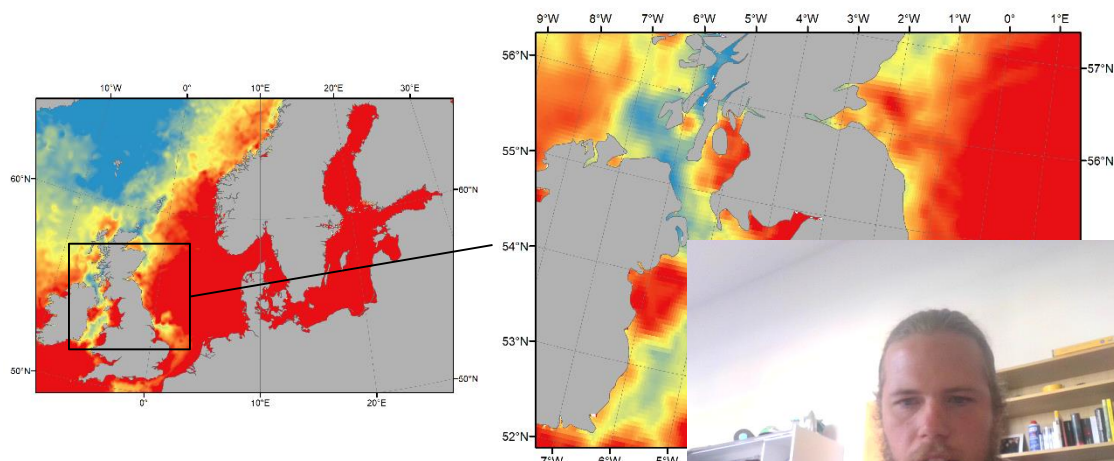
SST Anomalies over the North Sea



Longterm TIMELINE SST in July

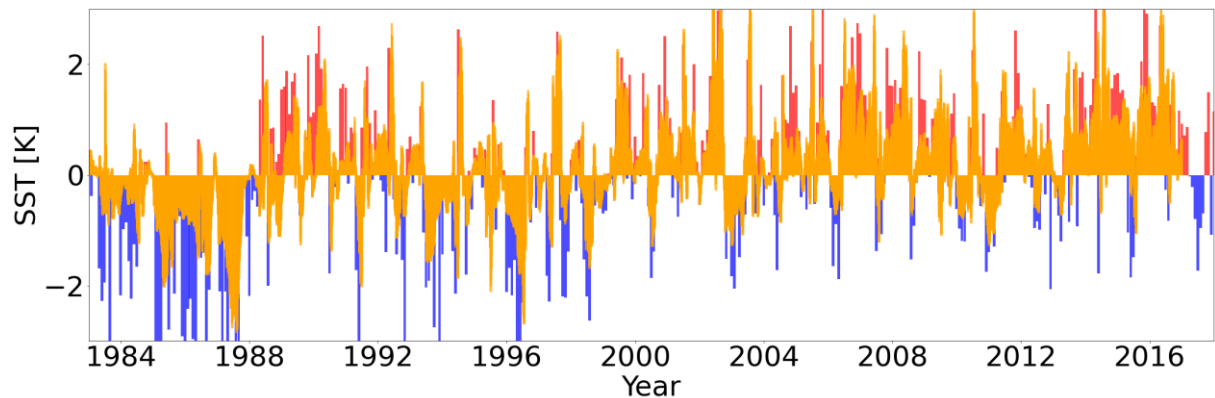


Longterm CCI SST in July

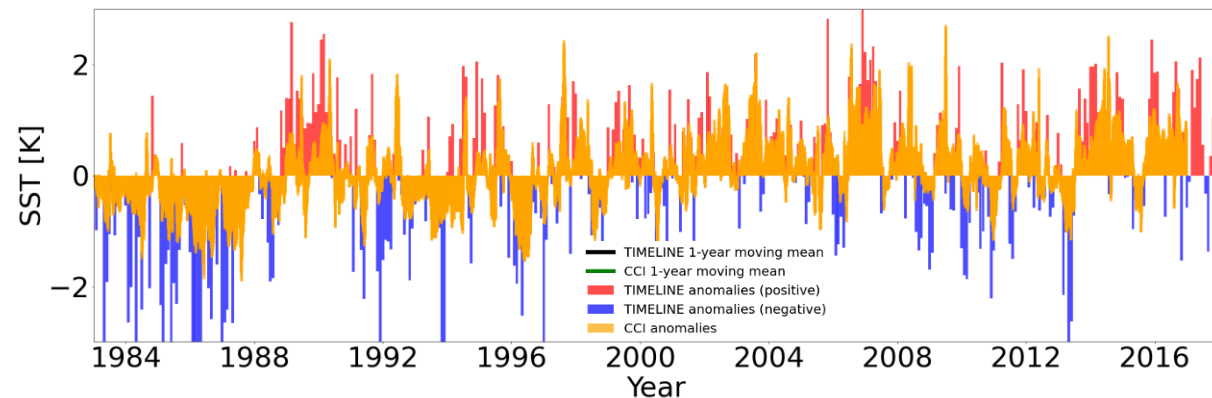


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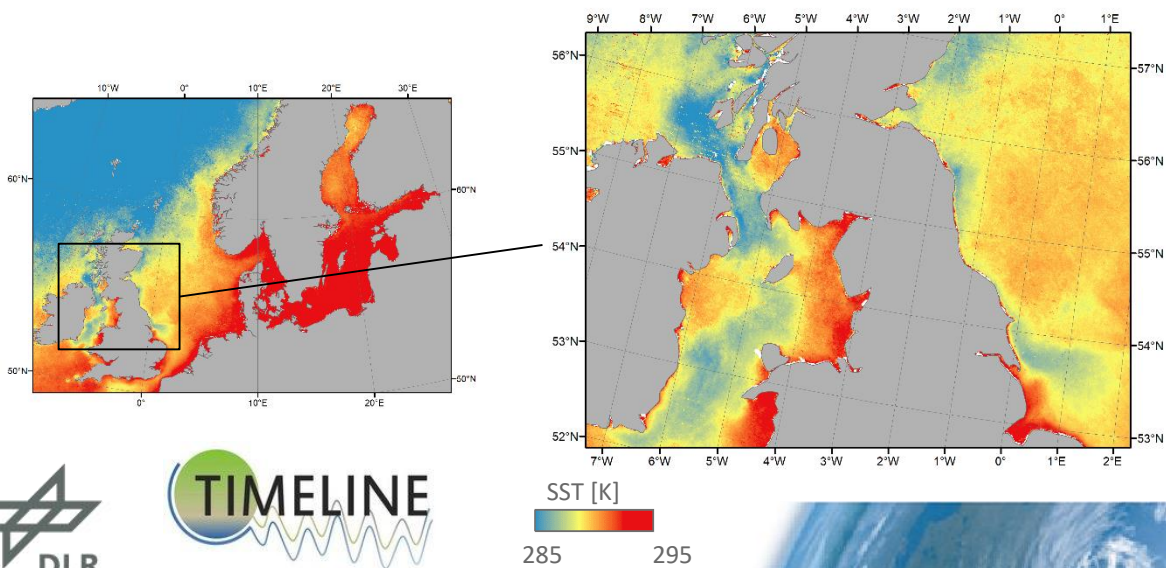
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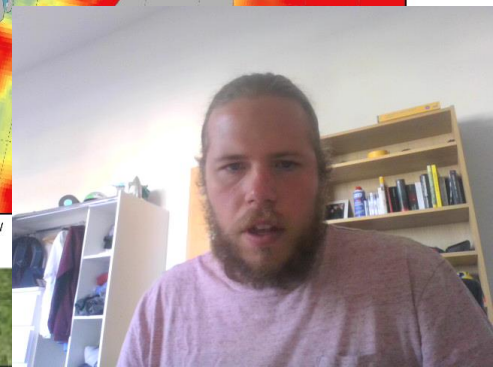
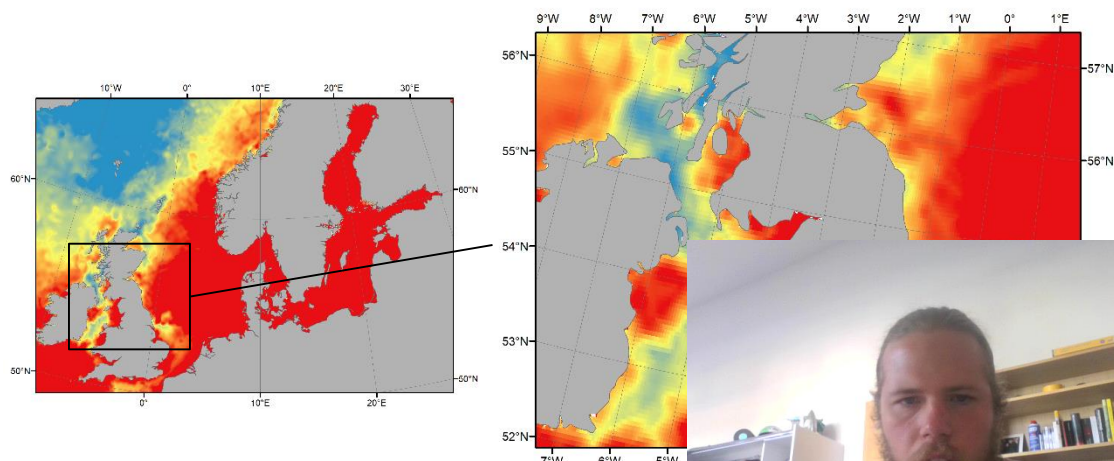
SST Anomalies over the North Sea



Longterm TIMELINE SST in July

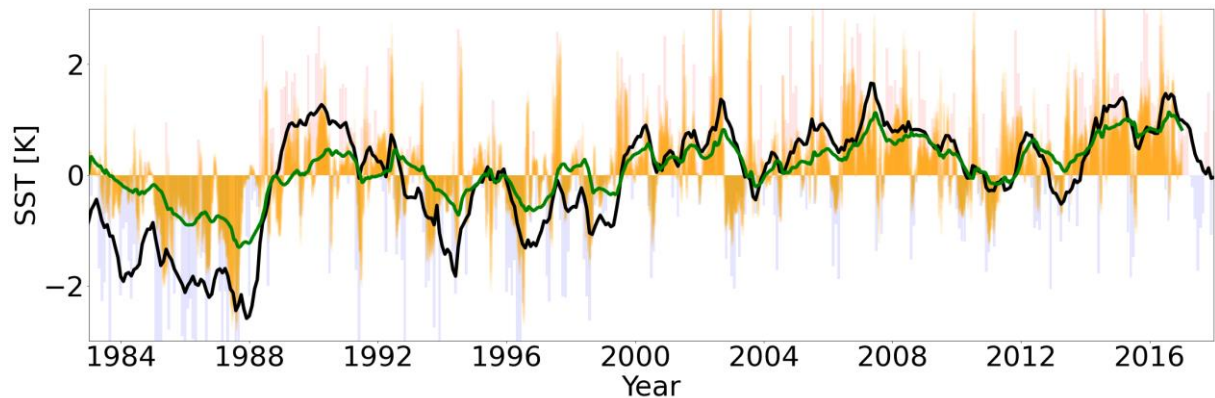


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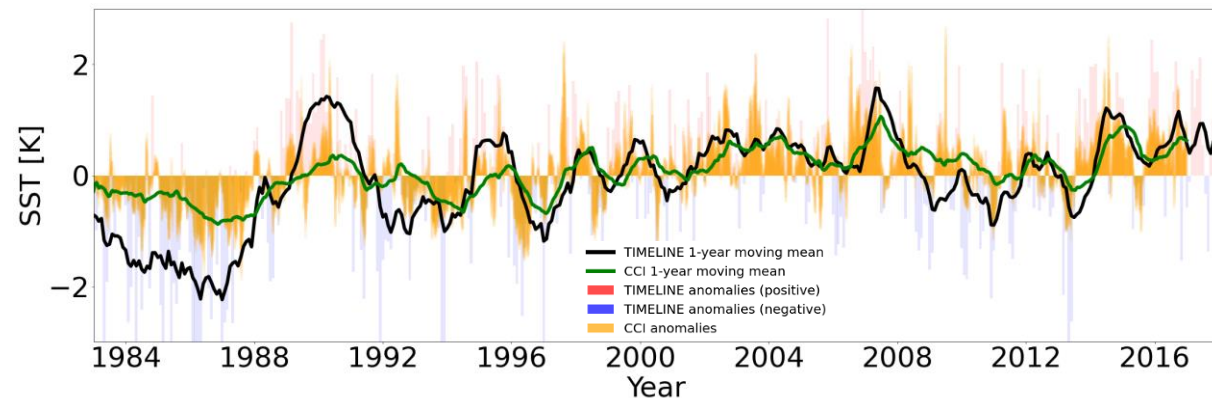


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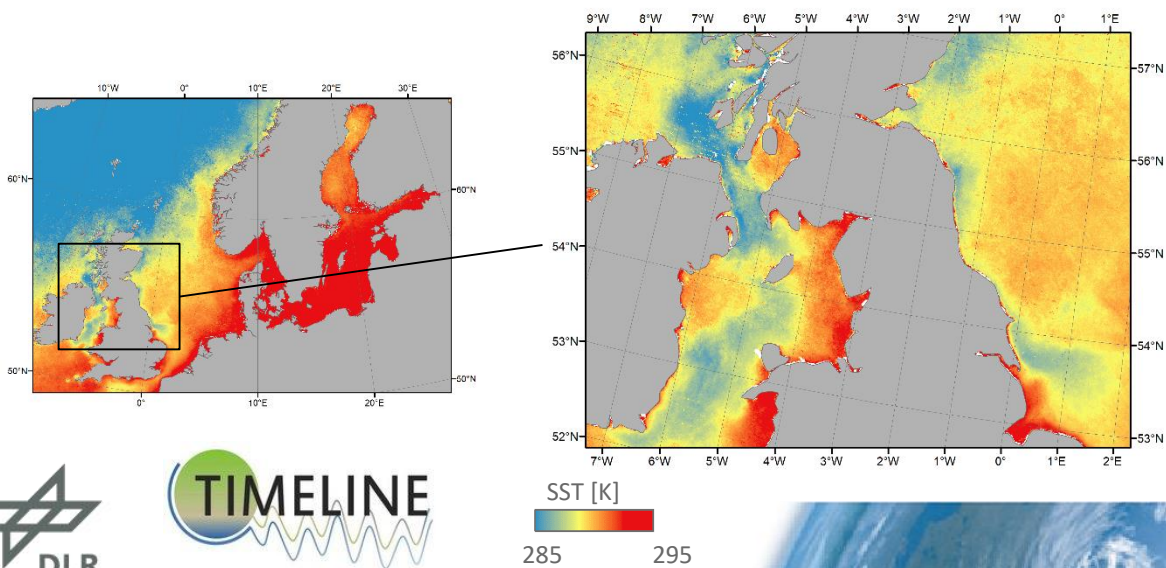
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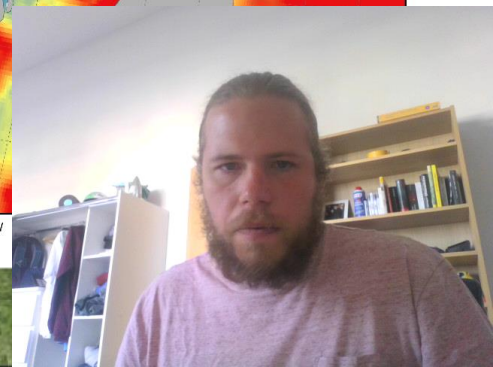
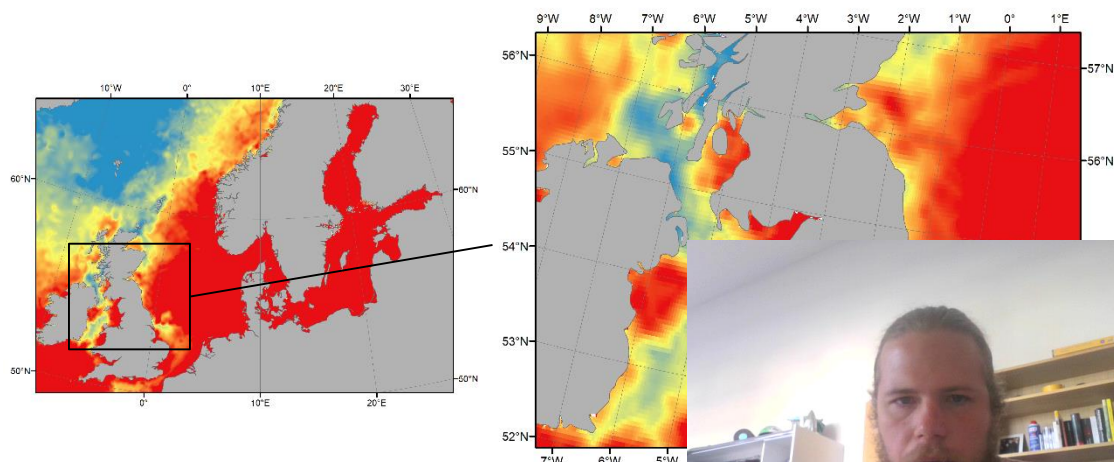
SST Anomalies over the North Sea



Longterm TIMELINE SST in July



Longterm CCI SST in July



Conclusions

- A new SST product from 1 km AVHRR data over Europe was introduced
- The Level 3 products show an overall good accordance with the CCI SST product and buoy measurements
- However, further validation and development of the algorithm are necessary to match the requirements for climate change studies
- The increased spatial resolution makes the product especially interesting for coastal regions

