

Downscaled Climate Projections

- ✓A example – Johannesburg report (Lisa Coop)
- ✓CSAG SOMD downscaled data

The Jo'burg report

The regional climate change analysis process:

1. Conceptual understanding of the regional climate system and associated important factors
2. Understanding of the strengths or weakness of GCMs simulations of the region
3. “Thought experiments” of climate change impacts
4. Analysis of large scale GCM projections
5. Analysis of local scale downscaled projections

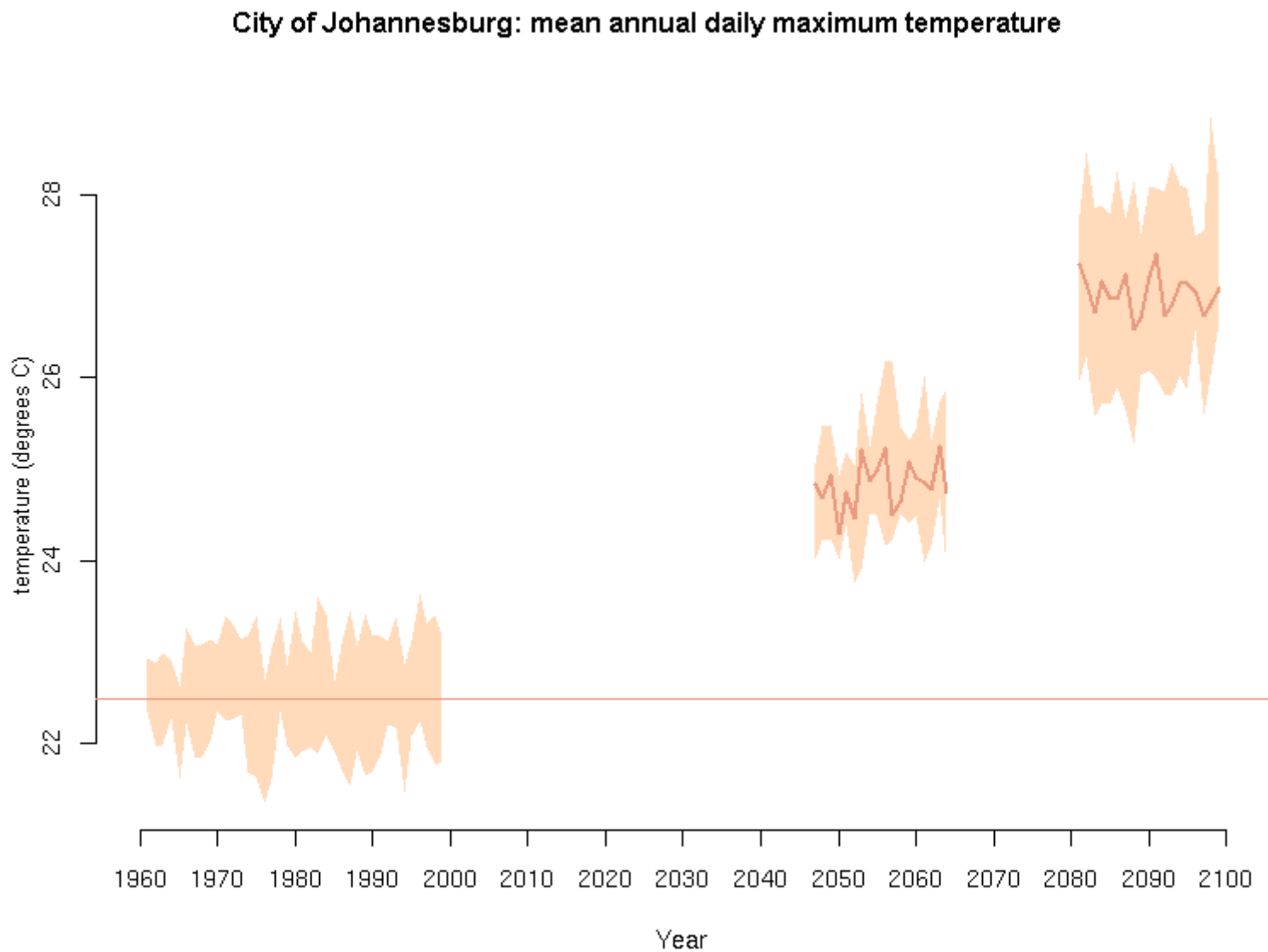
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- Southern African interior dominated by high pressure systems and stable layers, disturbed by TTTs and convective systems
- Increased subsidence caused by climate change should reduce rainfall but increased atmospheric moisture could increase rainfall.
- Boundary between moist(en)ing east and dry(ing) west adds complexity

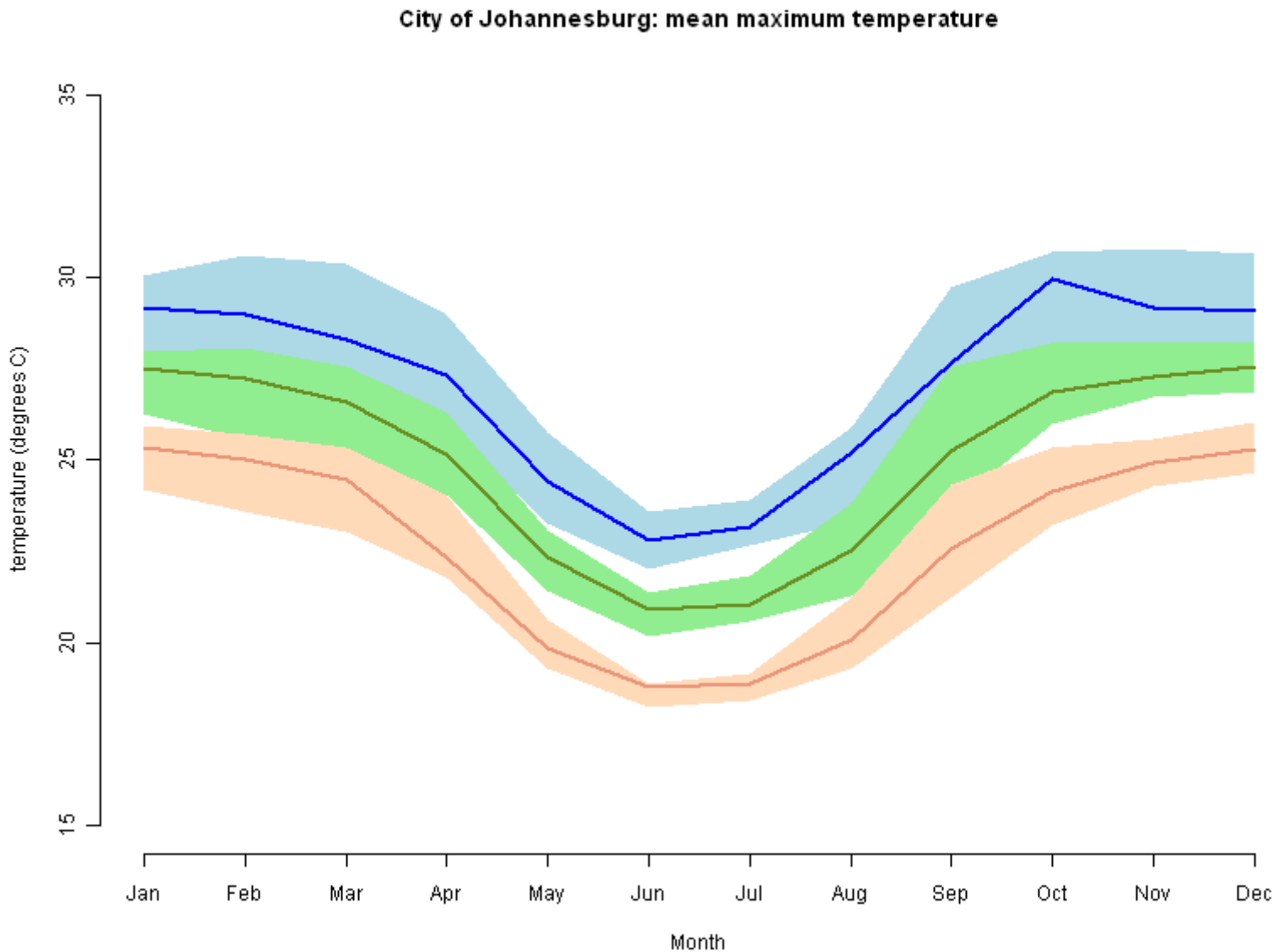
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- GCMs disagree on the sign of the change in precipitation for the area
- GCM precipitation is generally not reliable (structure of ITCZ, west coast upwelling etc....)
- GCMs largely agree on the large scale shifts in circulation systems (southward and stronger high pressure systems → more stable layers)

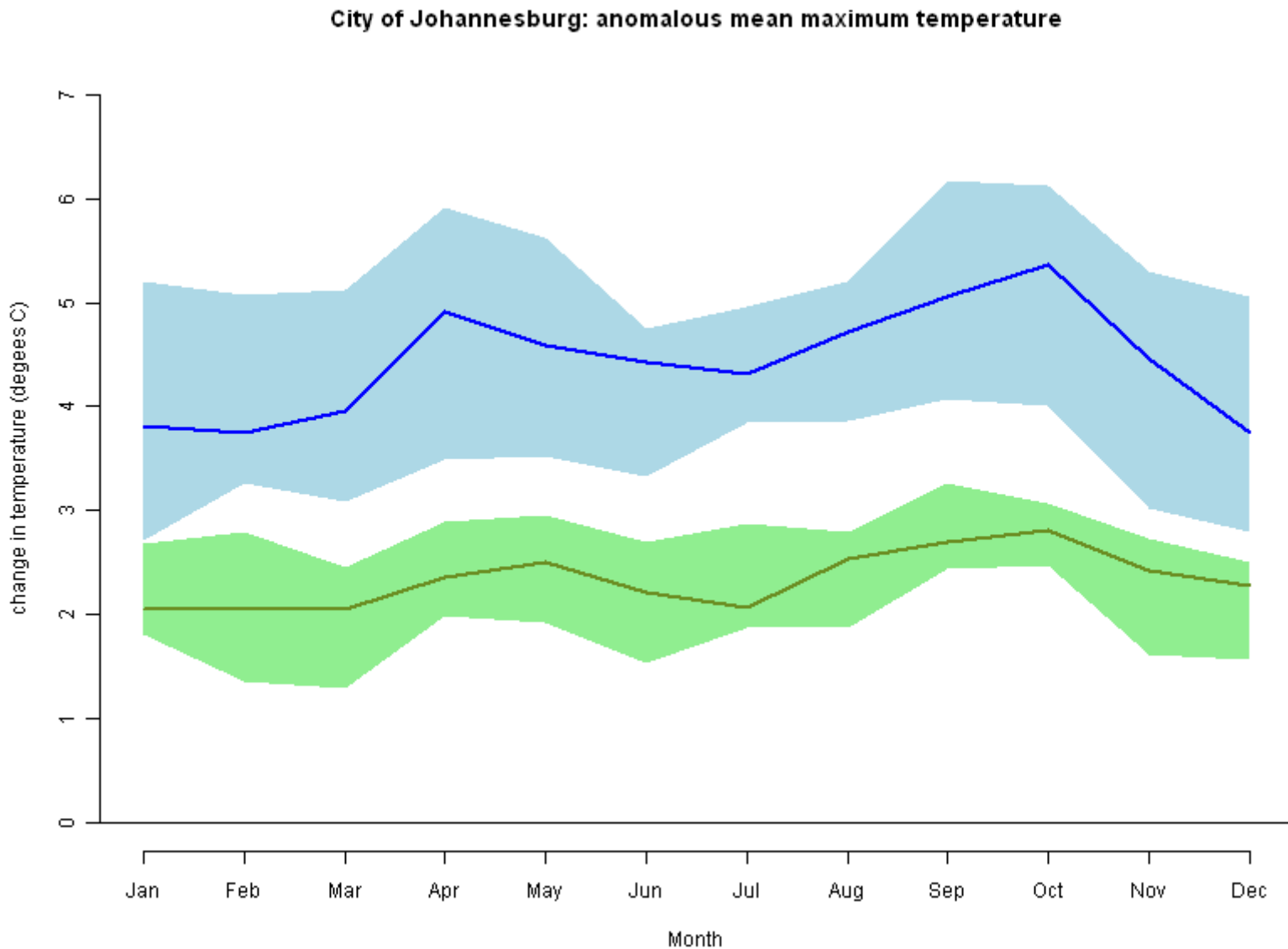
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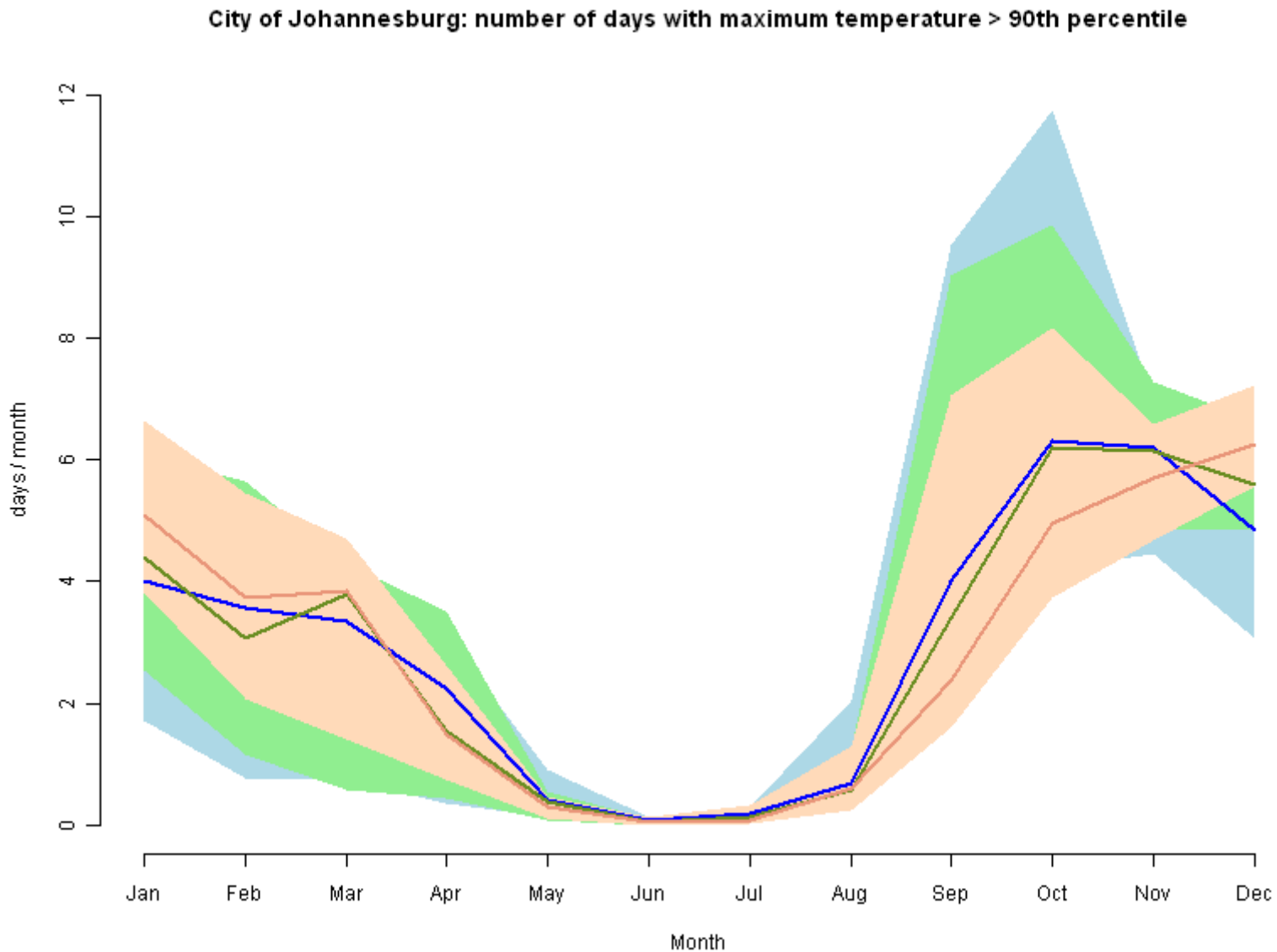
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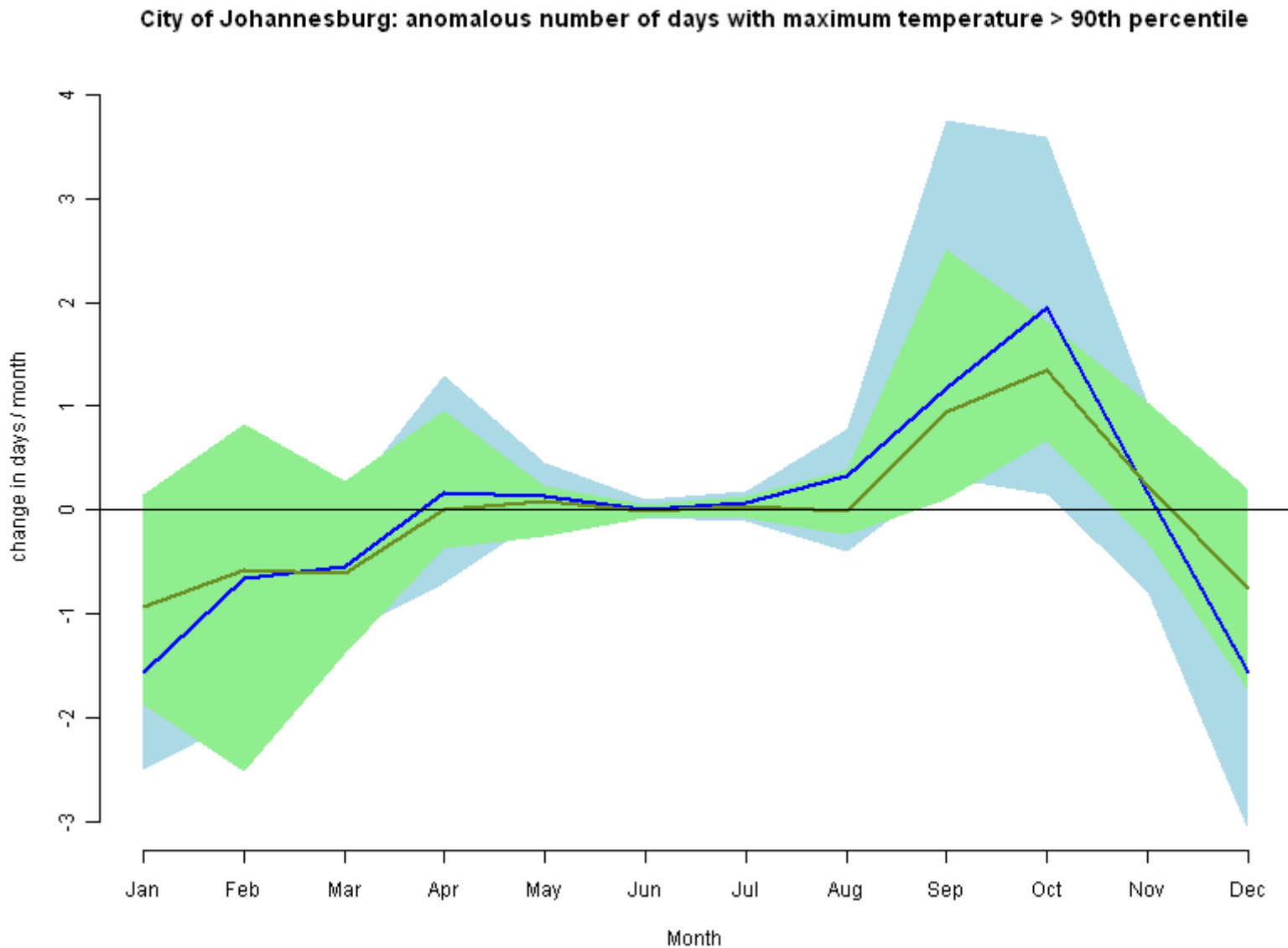
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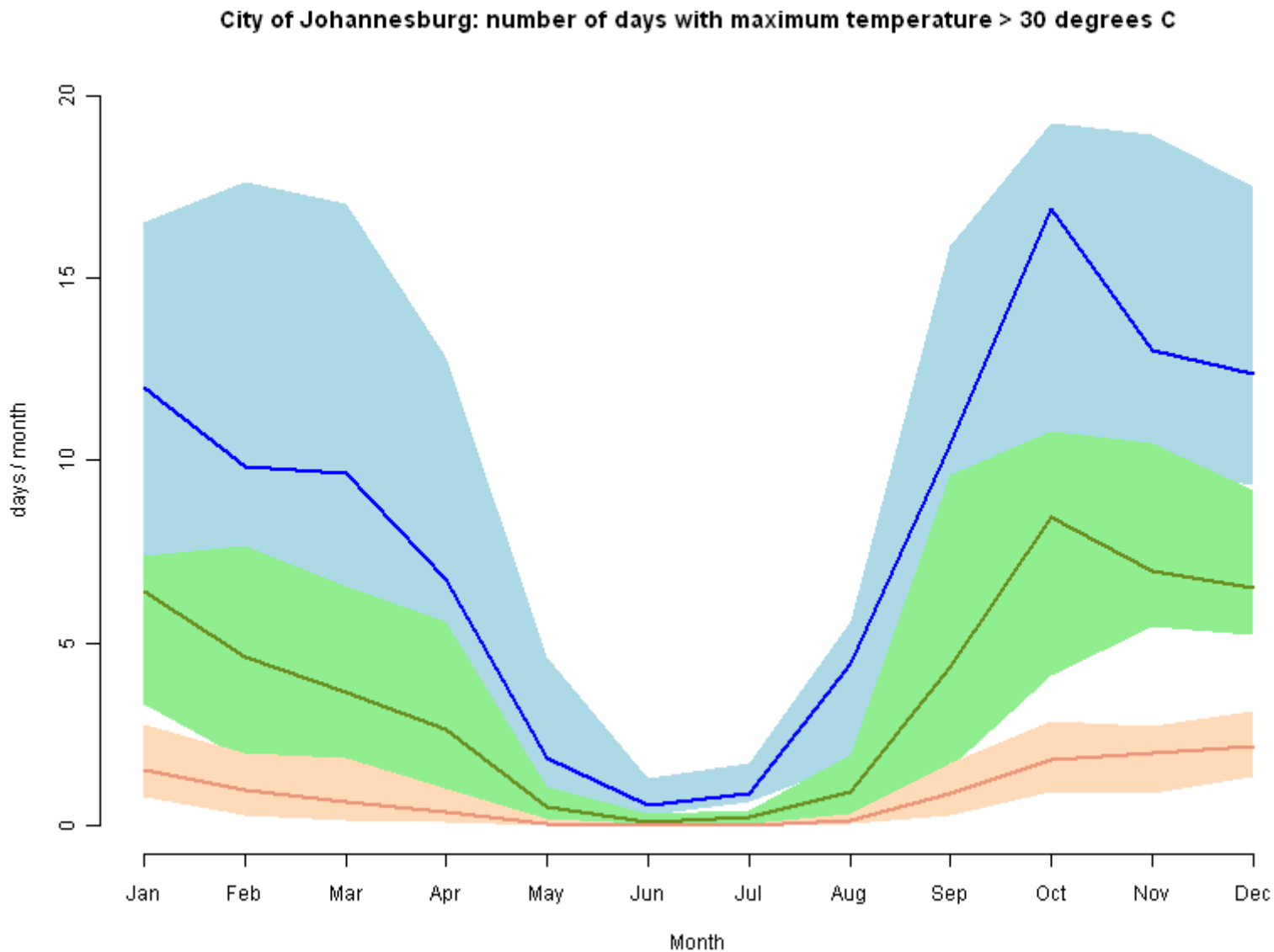
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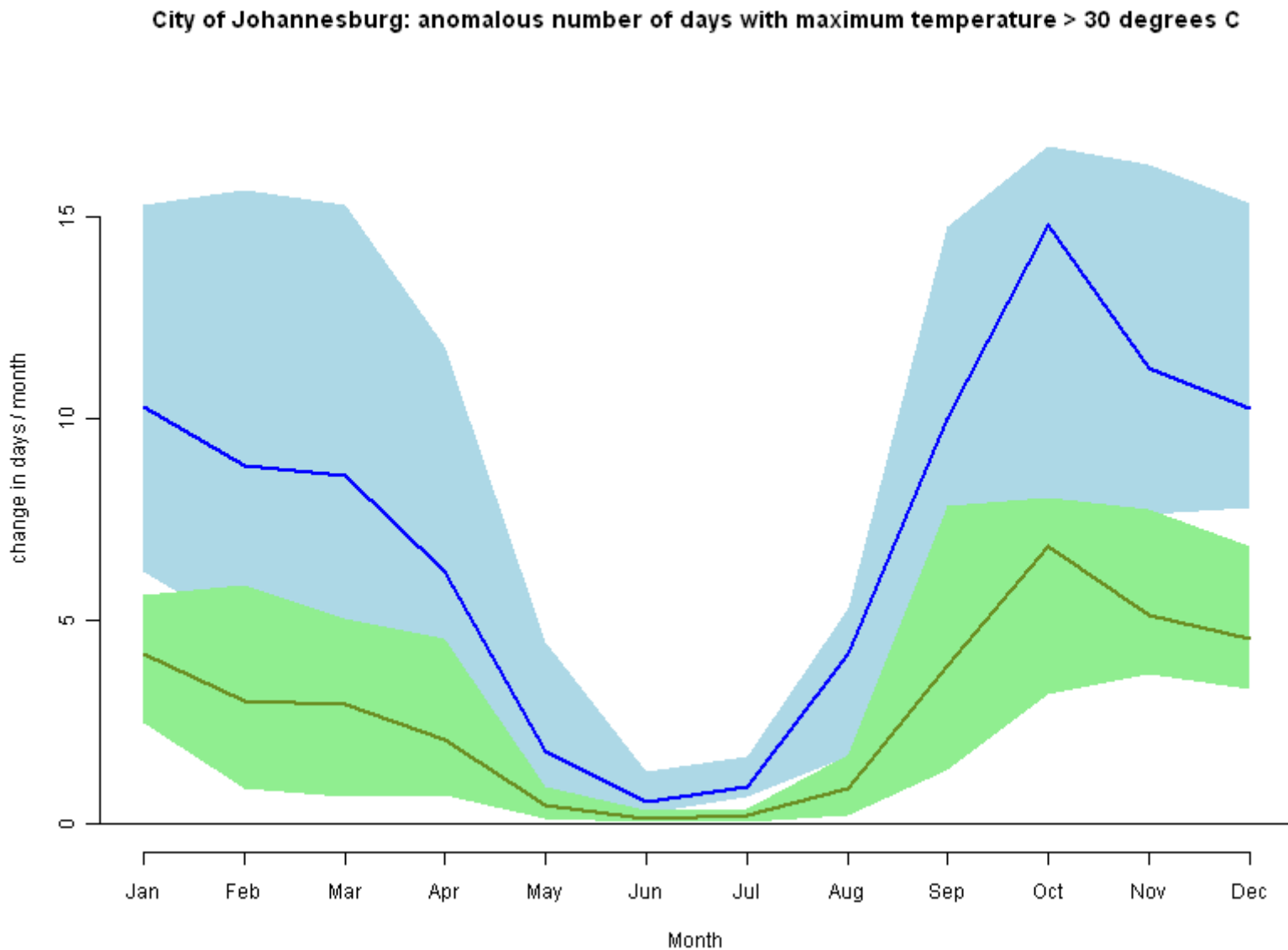
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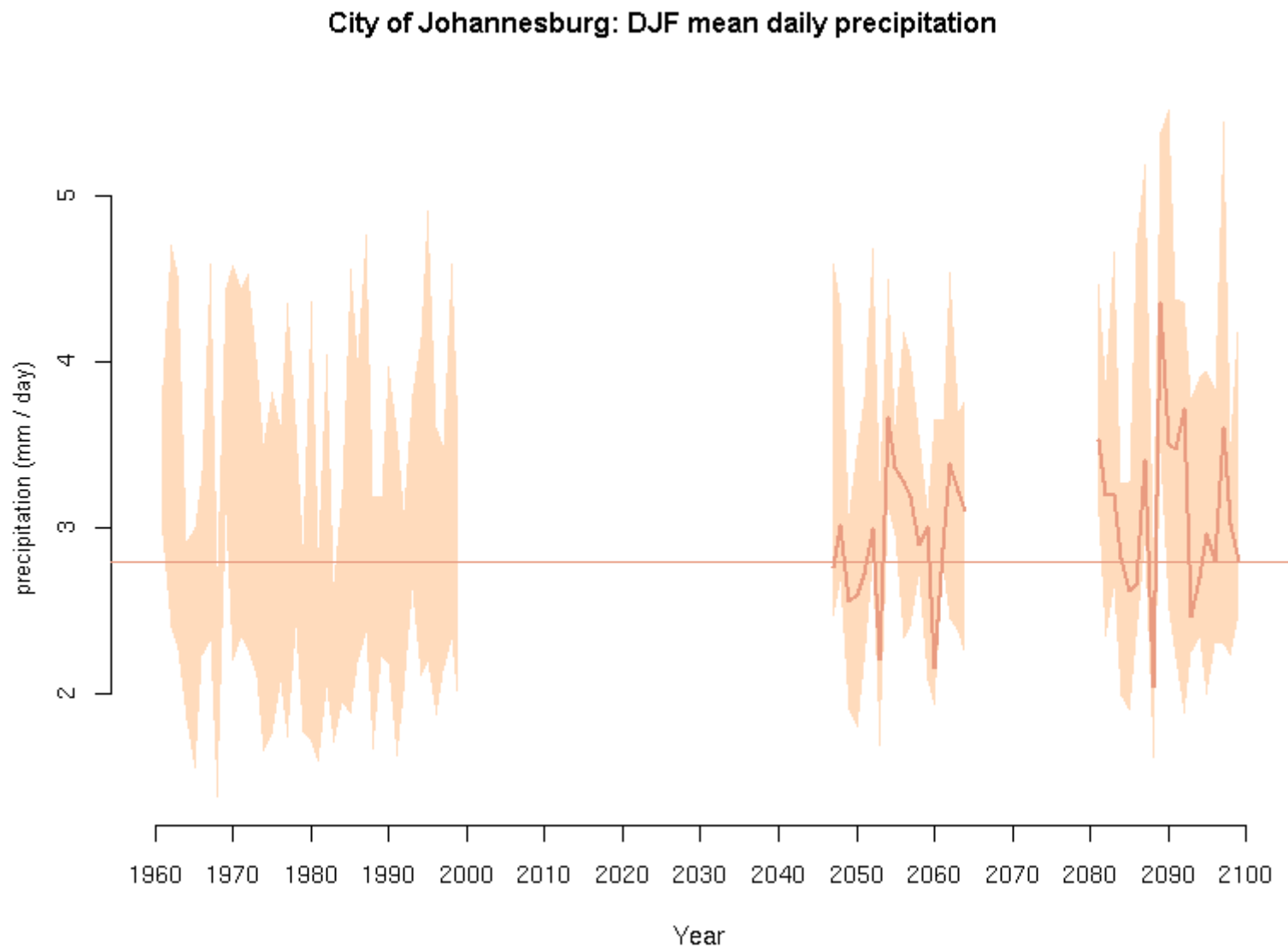
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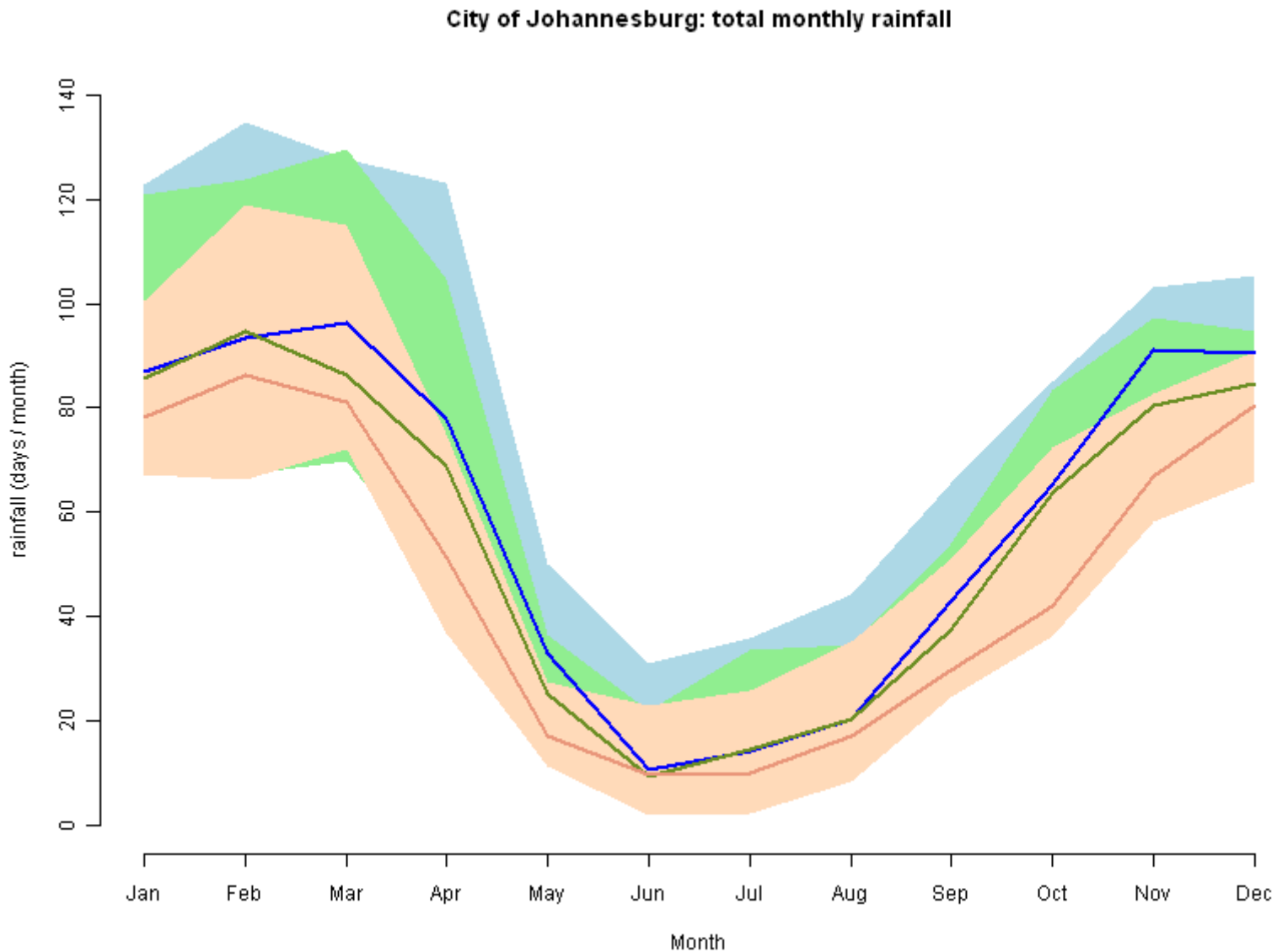
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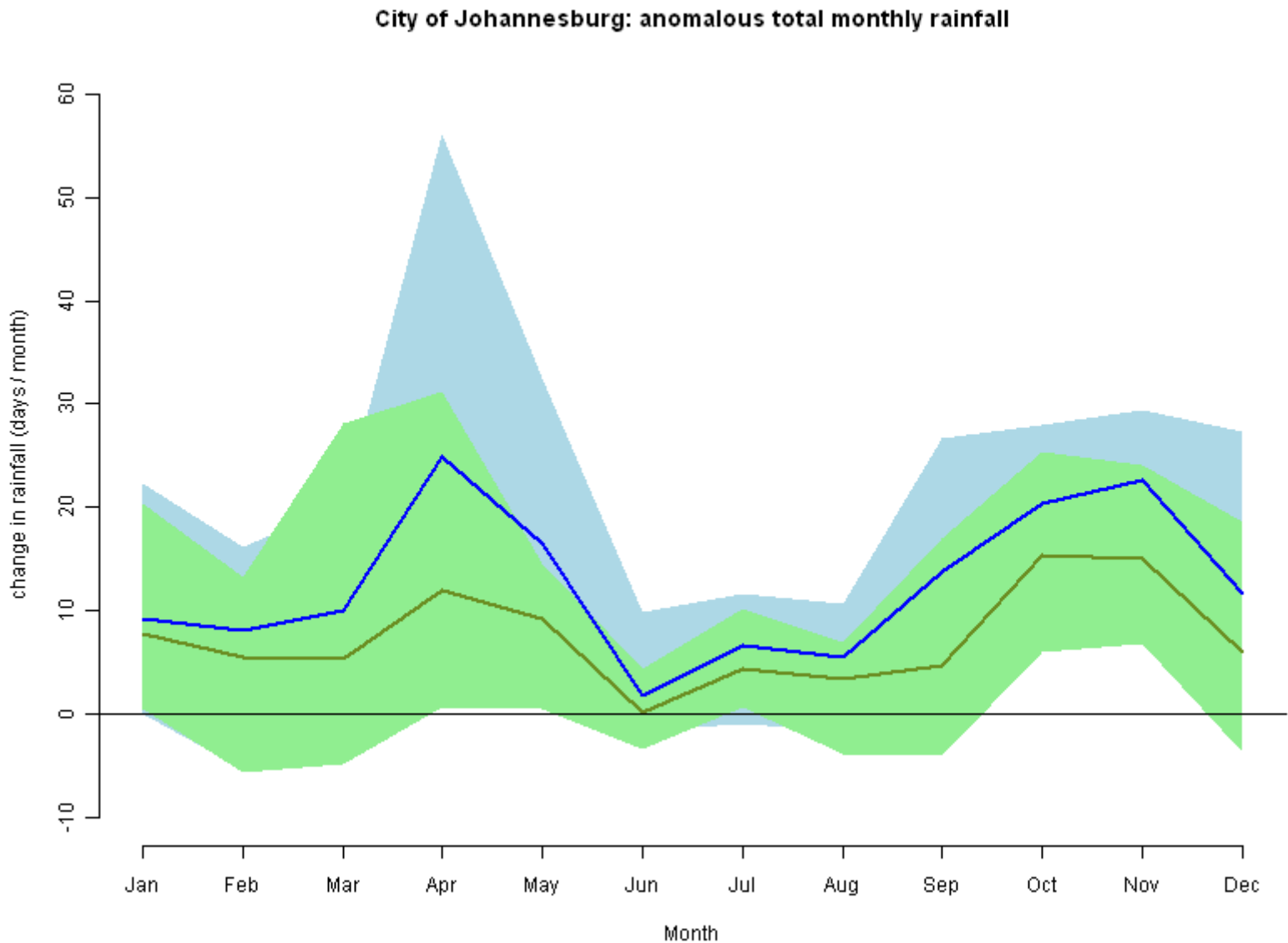
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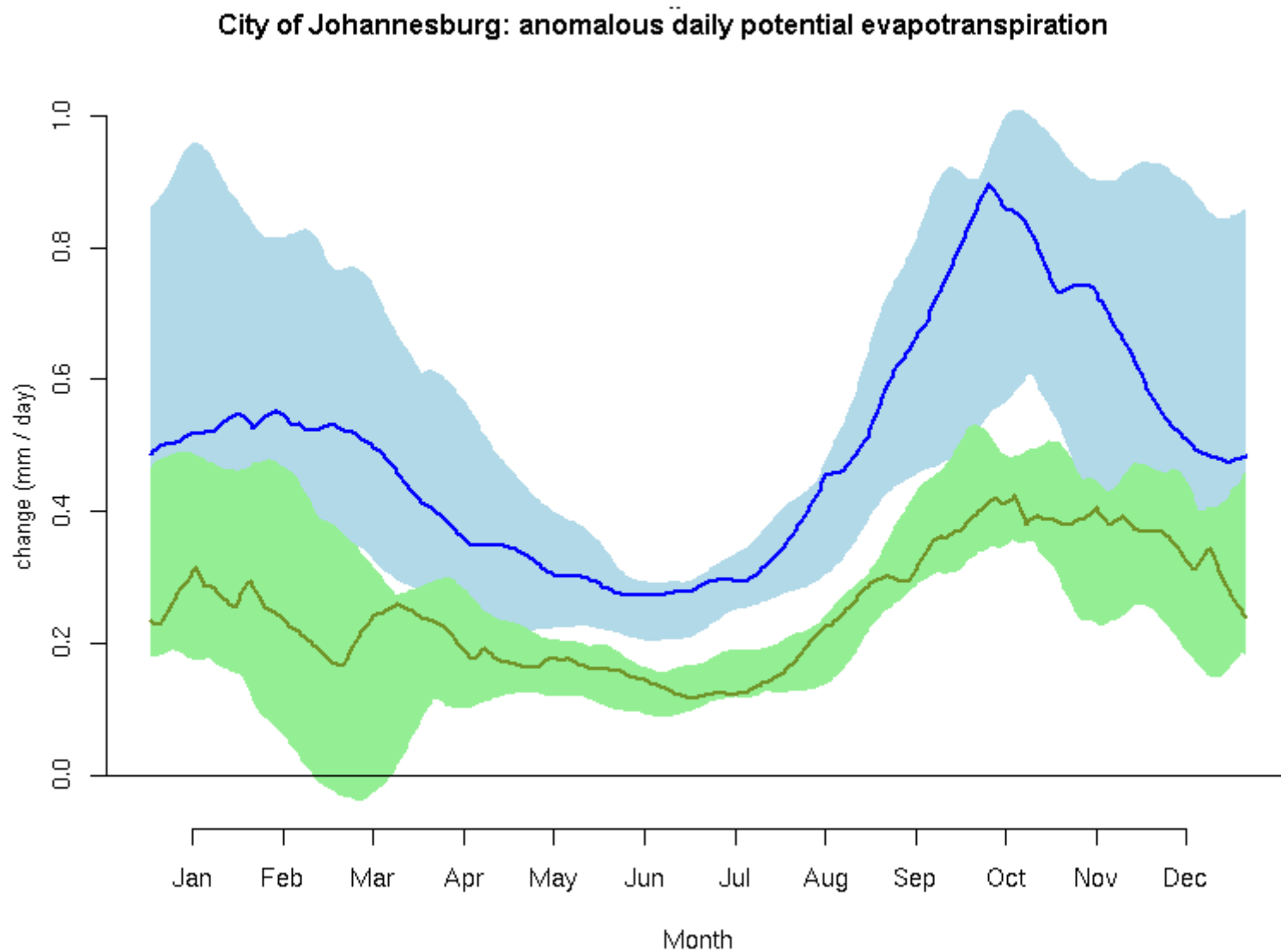
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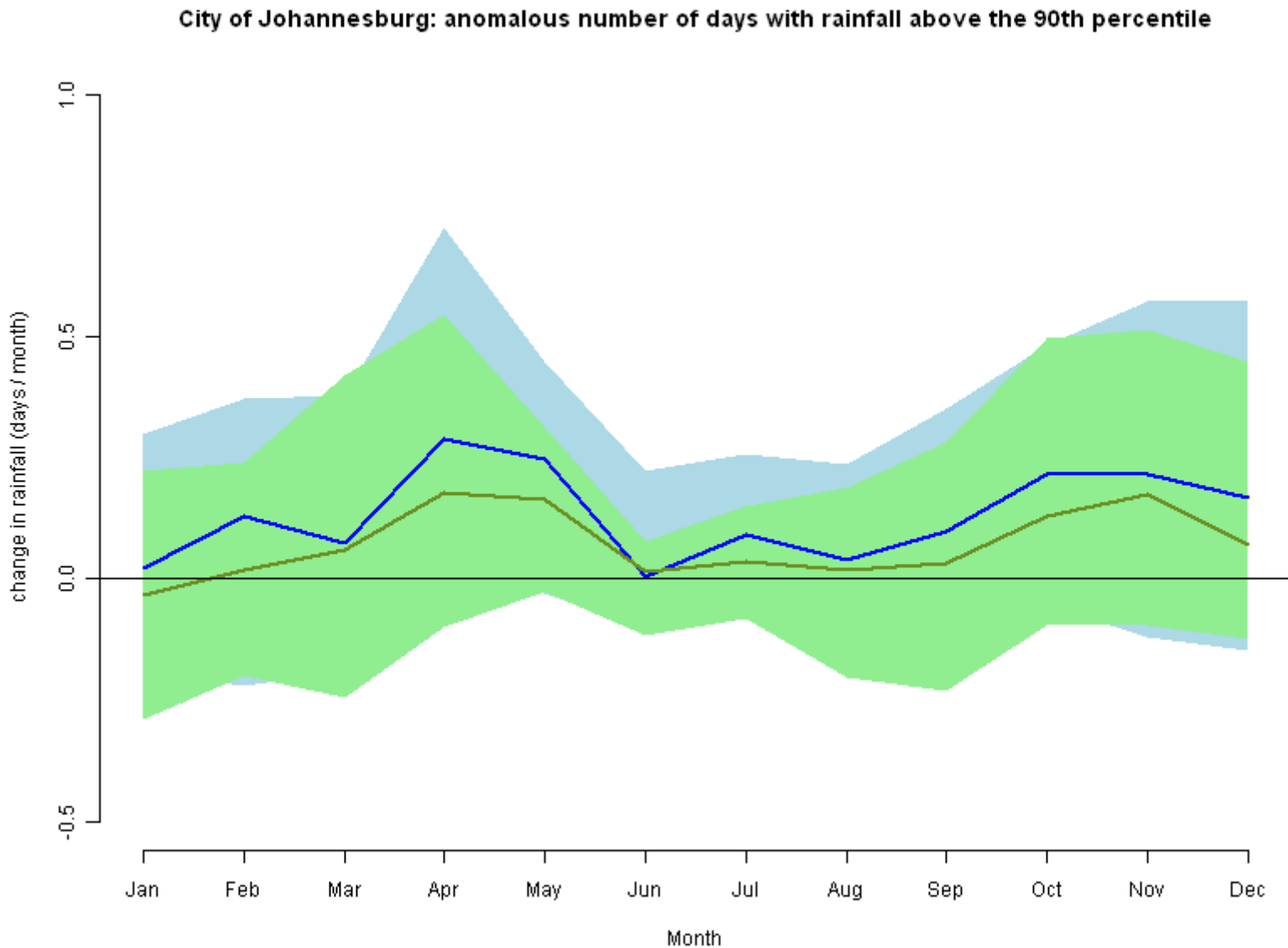
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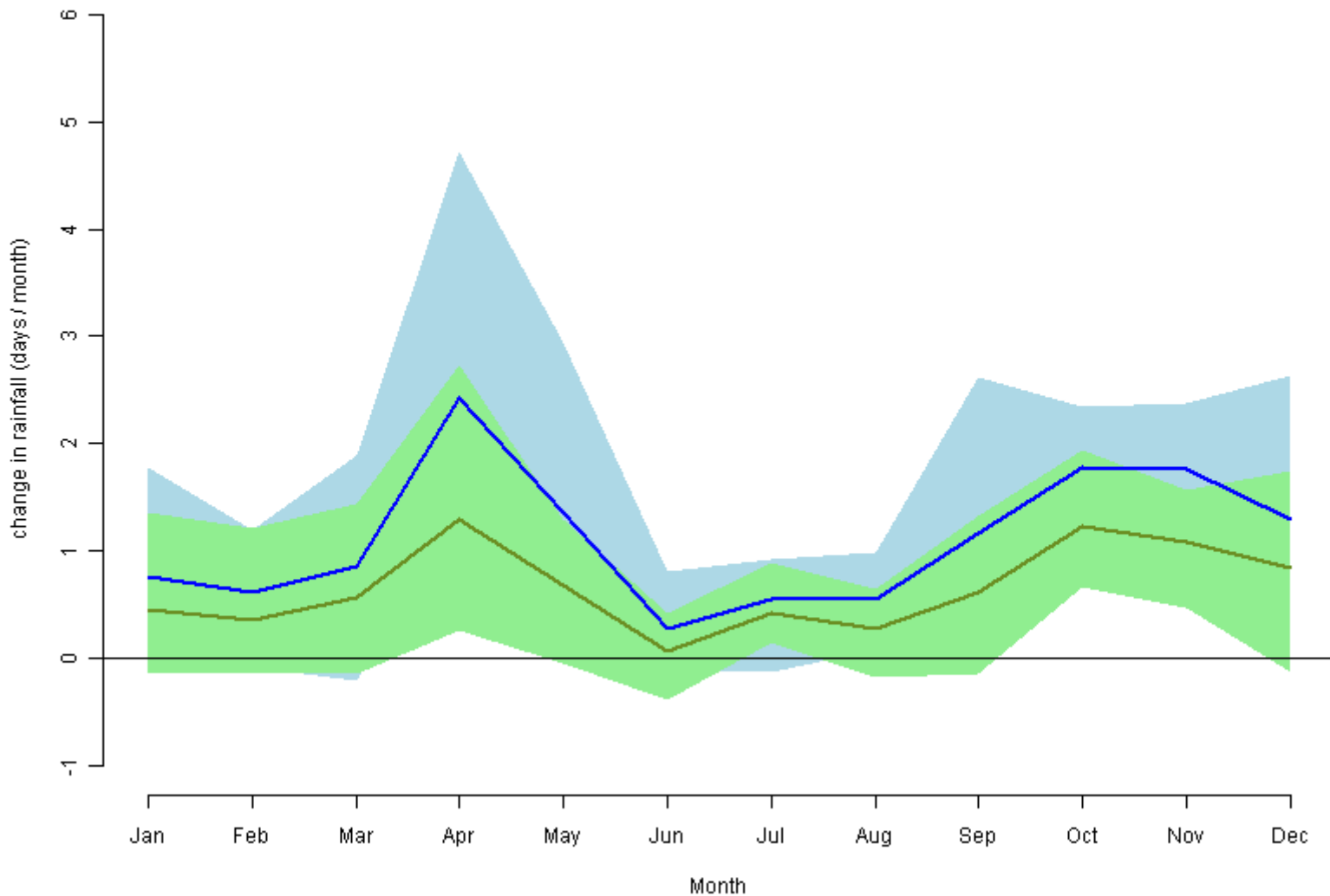


The Jo'burg report



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City of Johannesburg: anomalous number of days with rainfall above 2mm



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