

Future scenarios of soil water availability at managed grassland ecosystems in the Austrian Alps

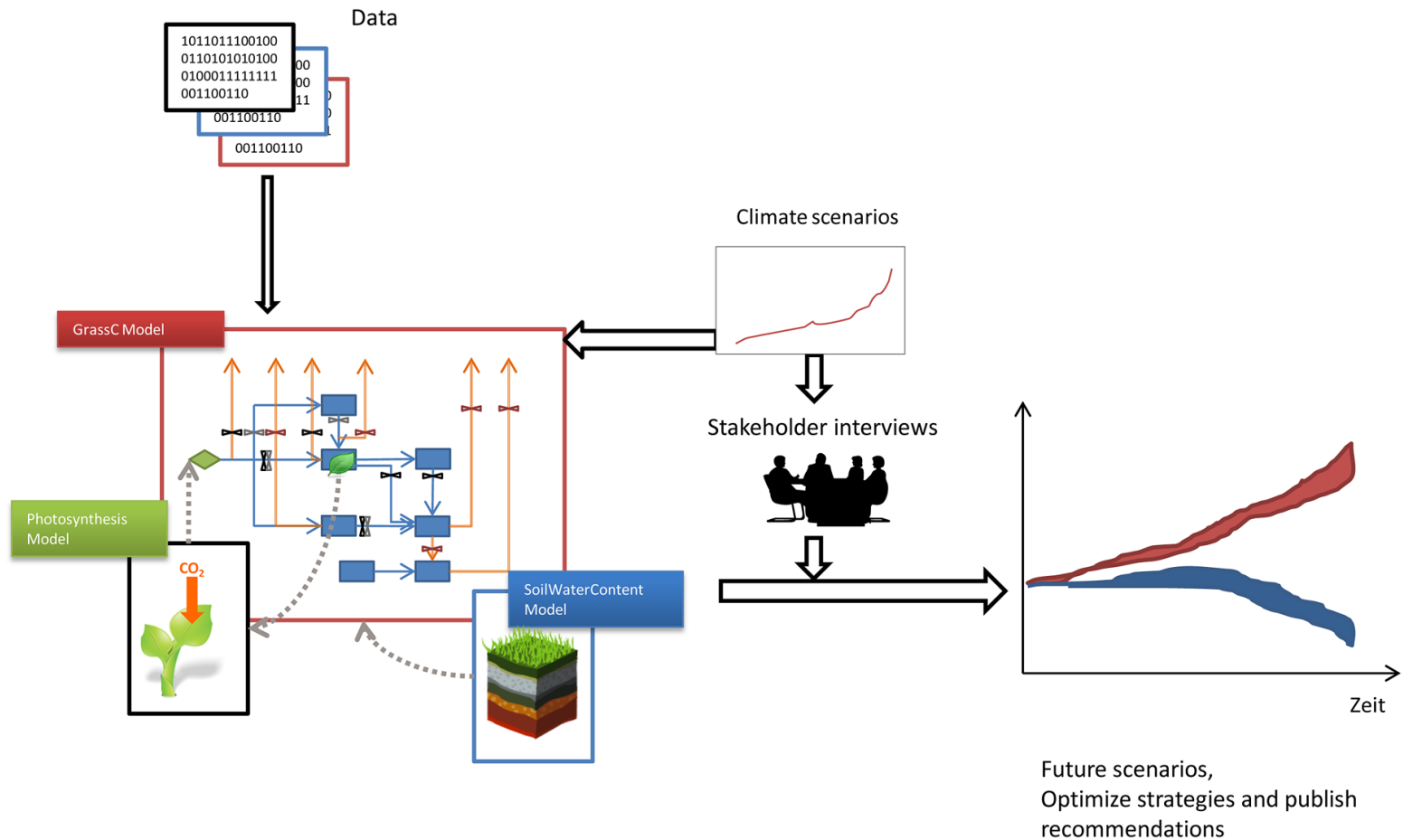
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¹University of Innsbruck, Institute of Ecology, Innsbruck

²Forschungsanstalt Agroscope Reckenholz-Tänikon ART, Zürich

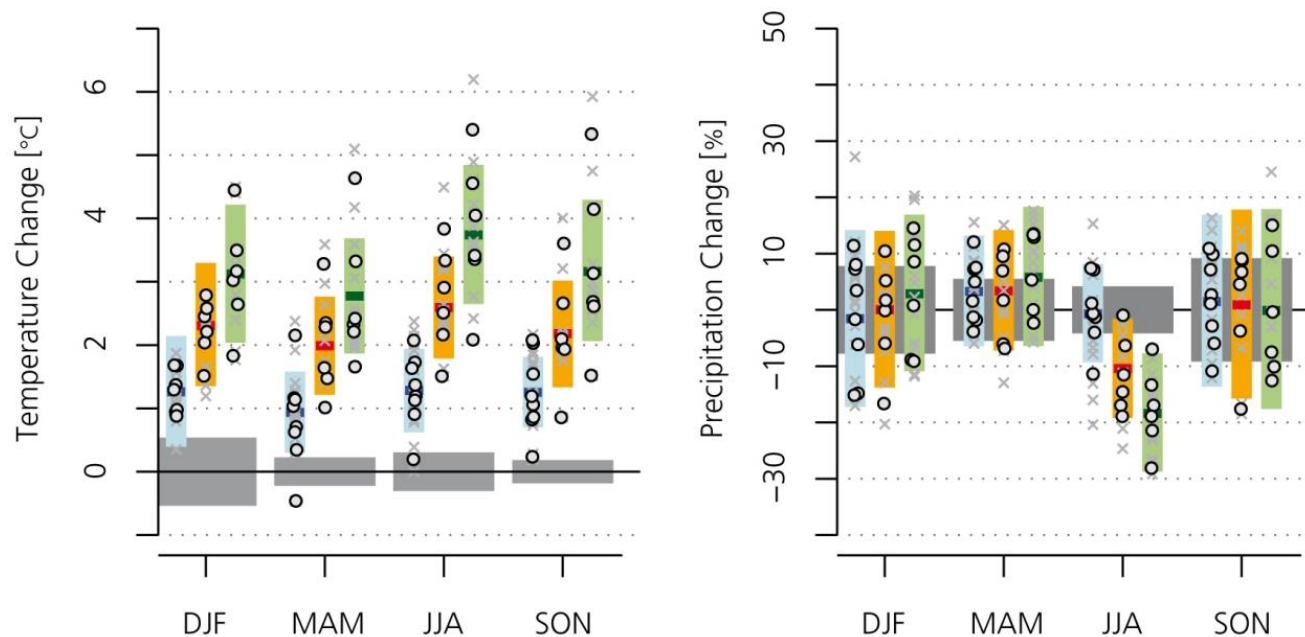
³University of Graz, Wegener Zentrum für Klima und Globalen Wandel, Graz

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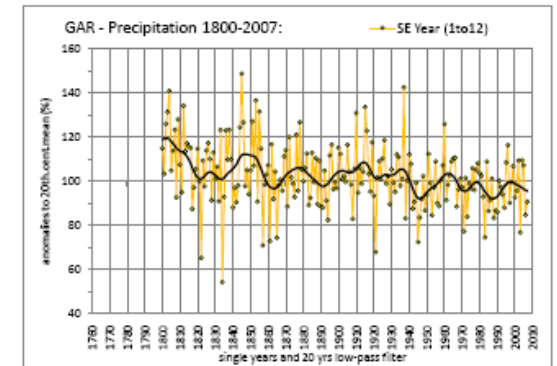
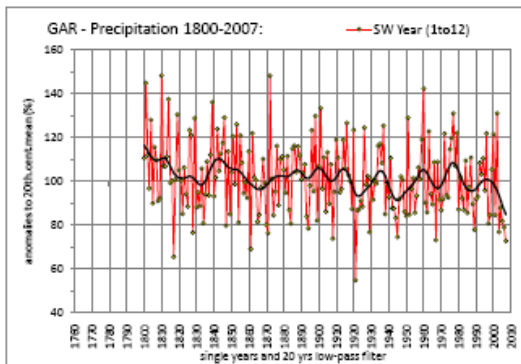
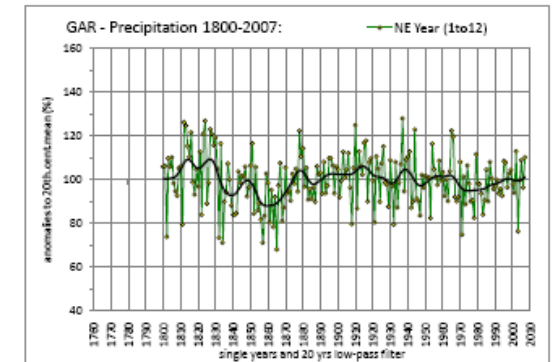
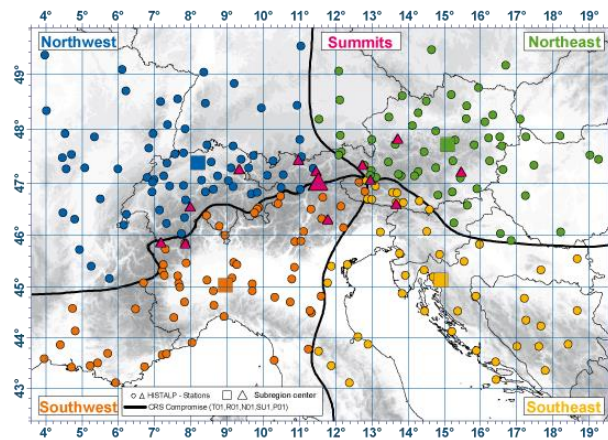
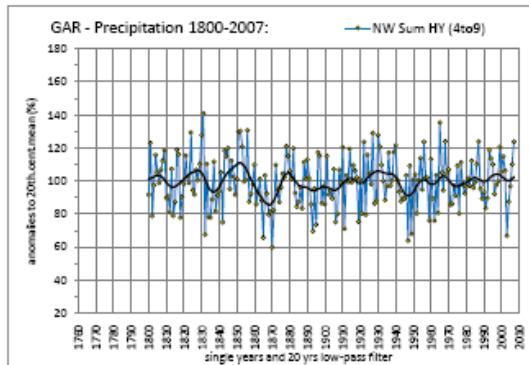
Future Climate in the Alps (north-eastern Switzerland)



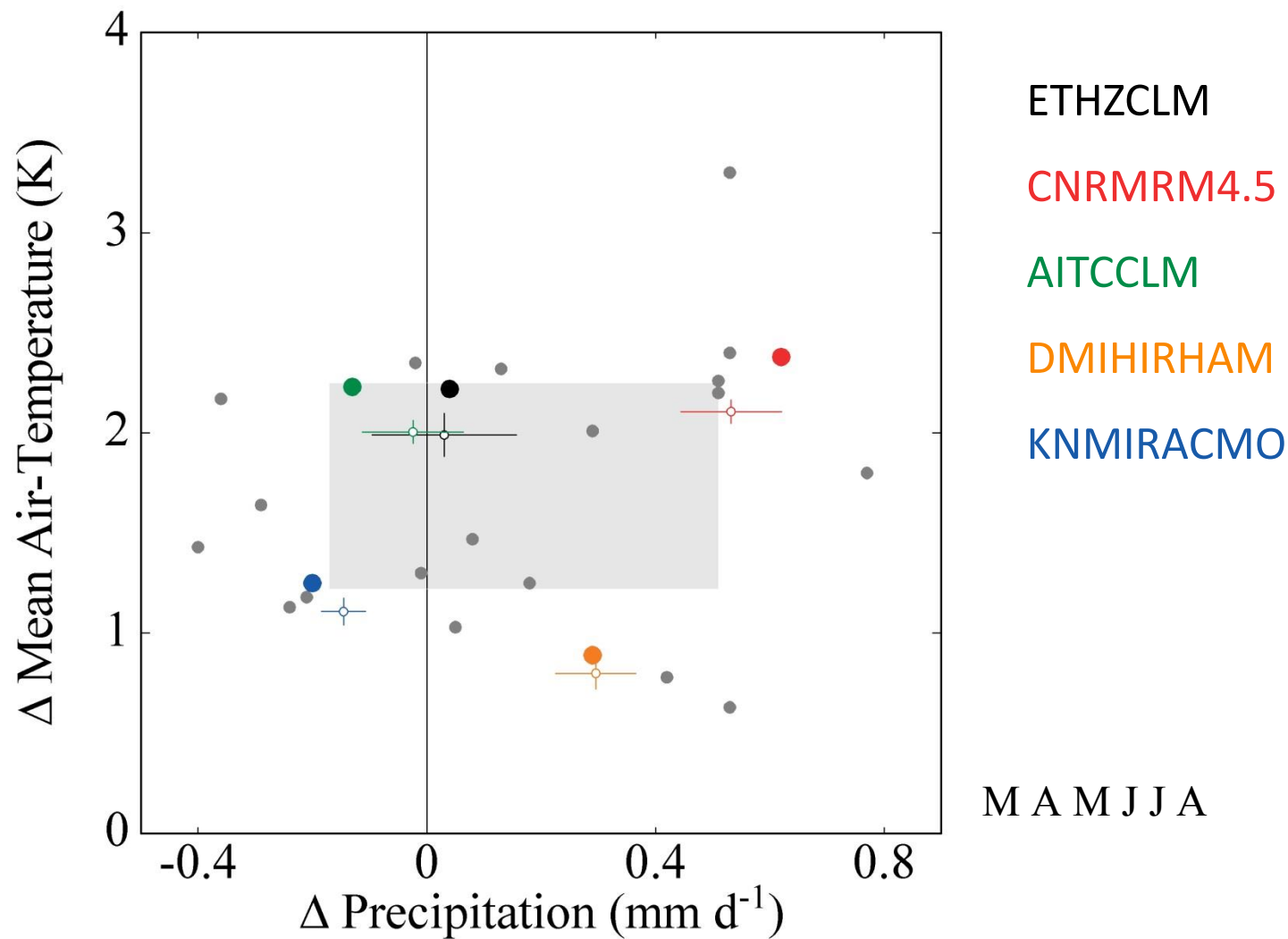
Reference period: 1980 – 2009 vs. 2020–2049, 2045–2074 and 2070–2099



INTRODUCTION | RECENT TRENDS

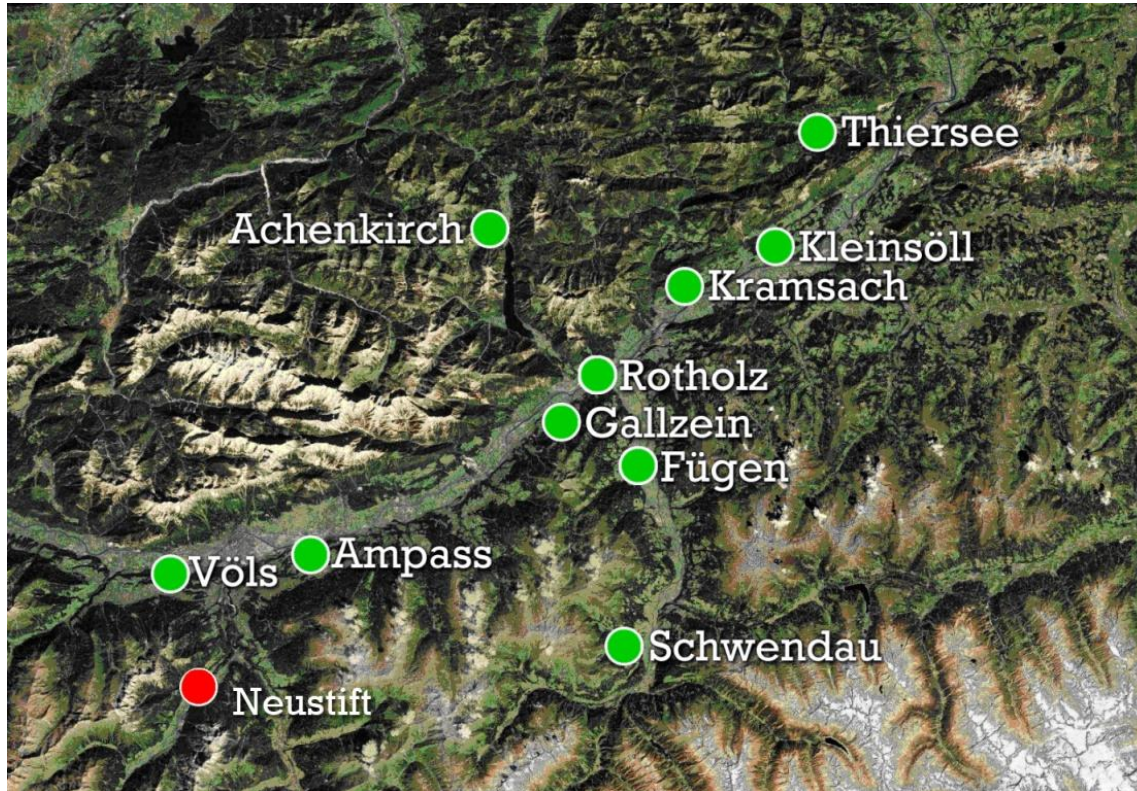


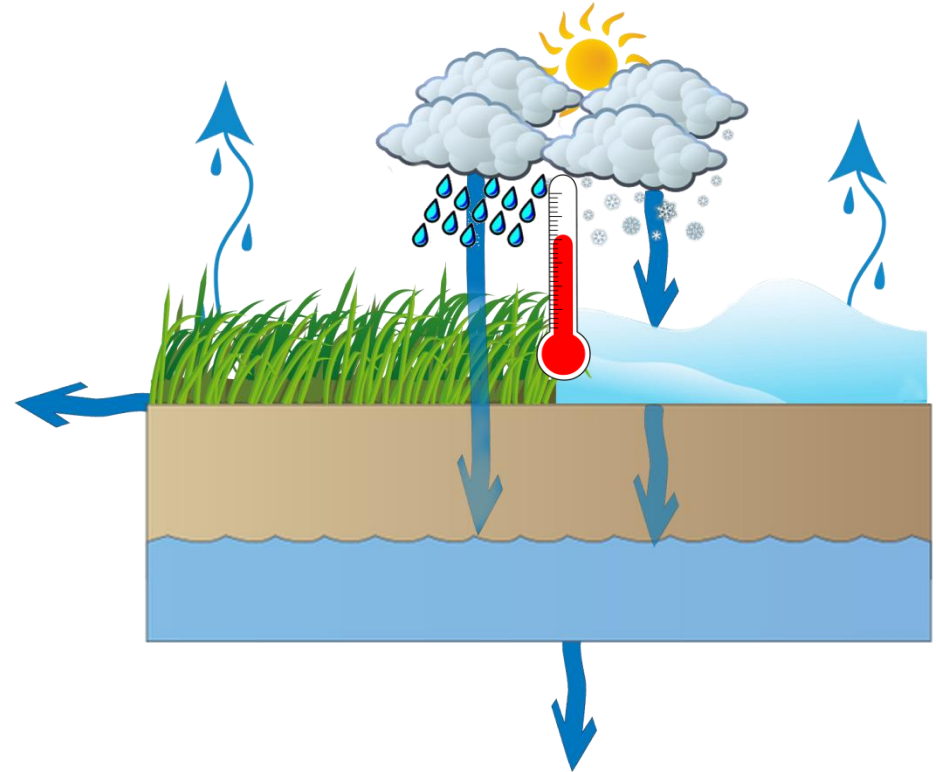
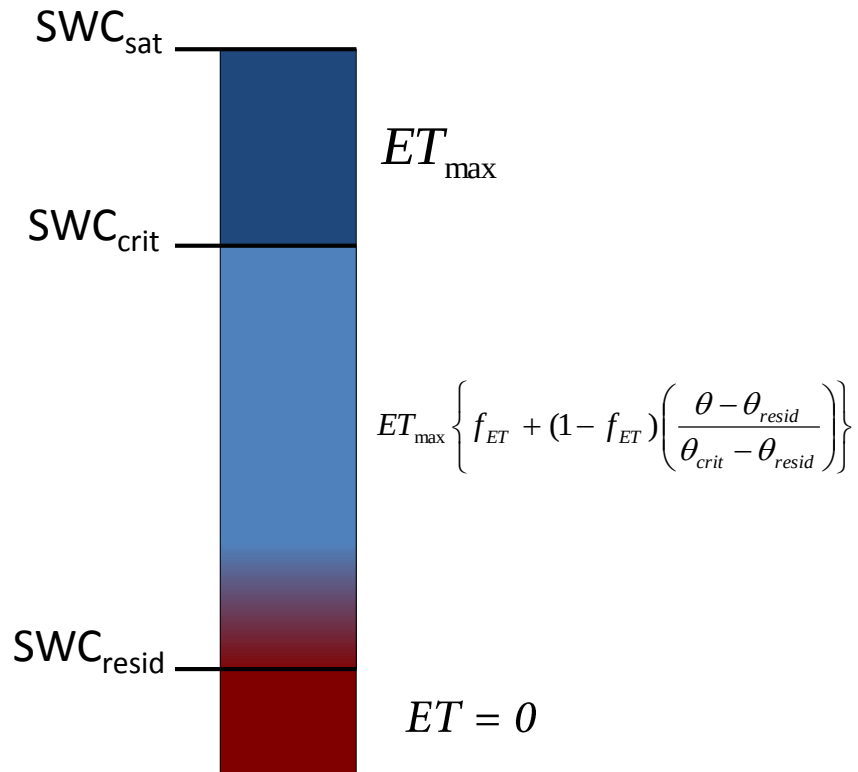
<http://www.zamg.ac.at/histalp/>





SITES

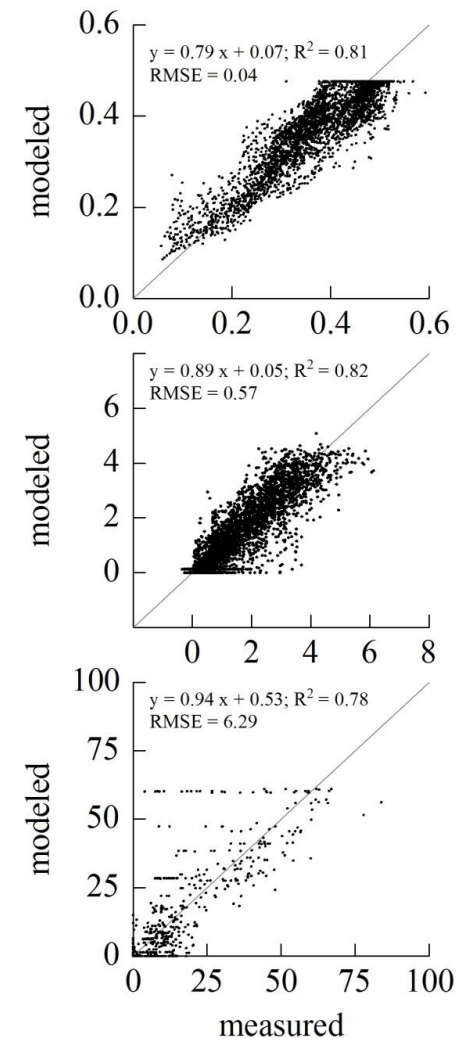
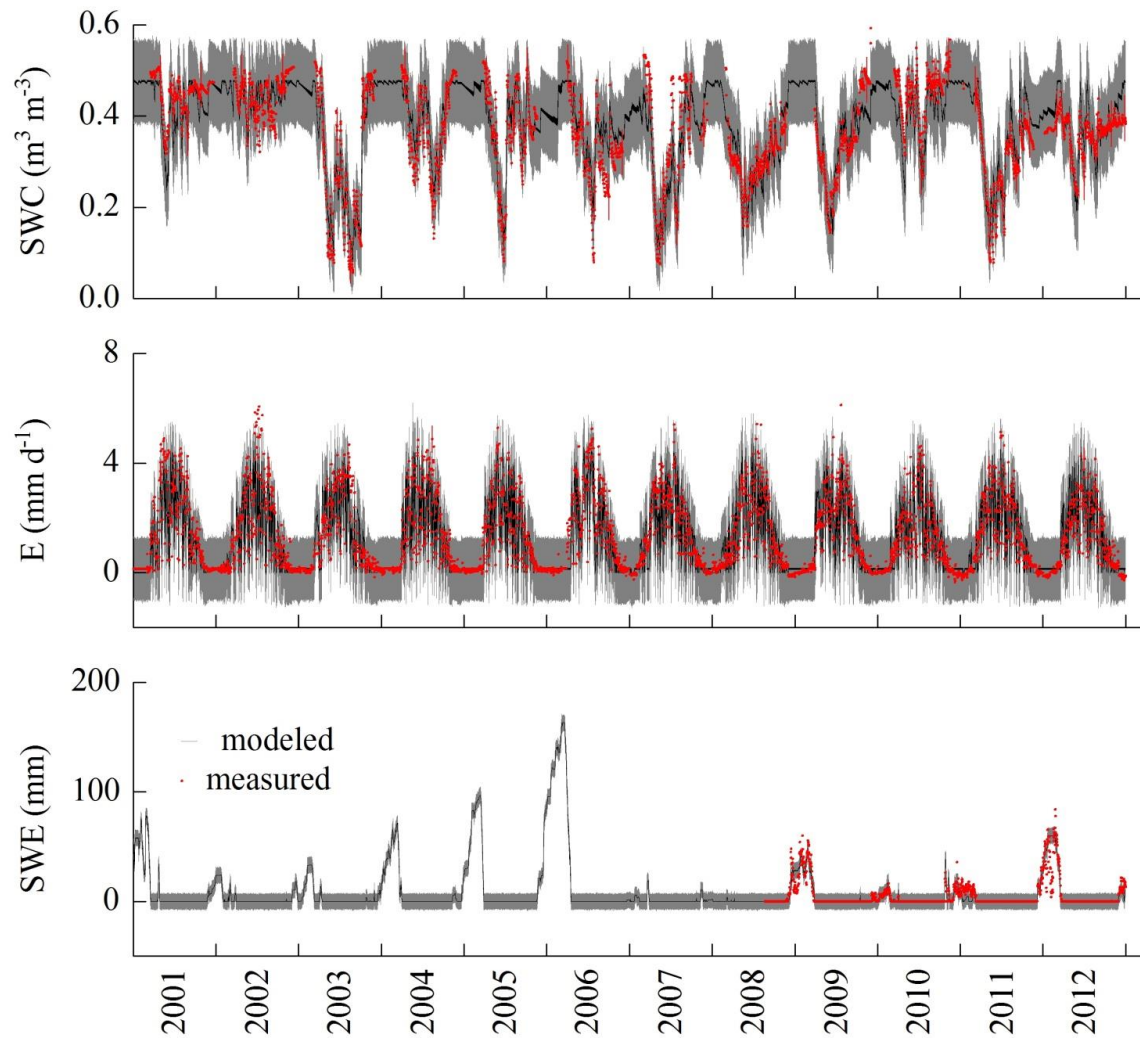




Developed by Pierluigi Calanca, Forschungsanstalt Agroscope Reckenholz-Tänikon ART, Zürich (CH)

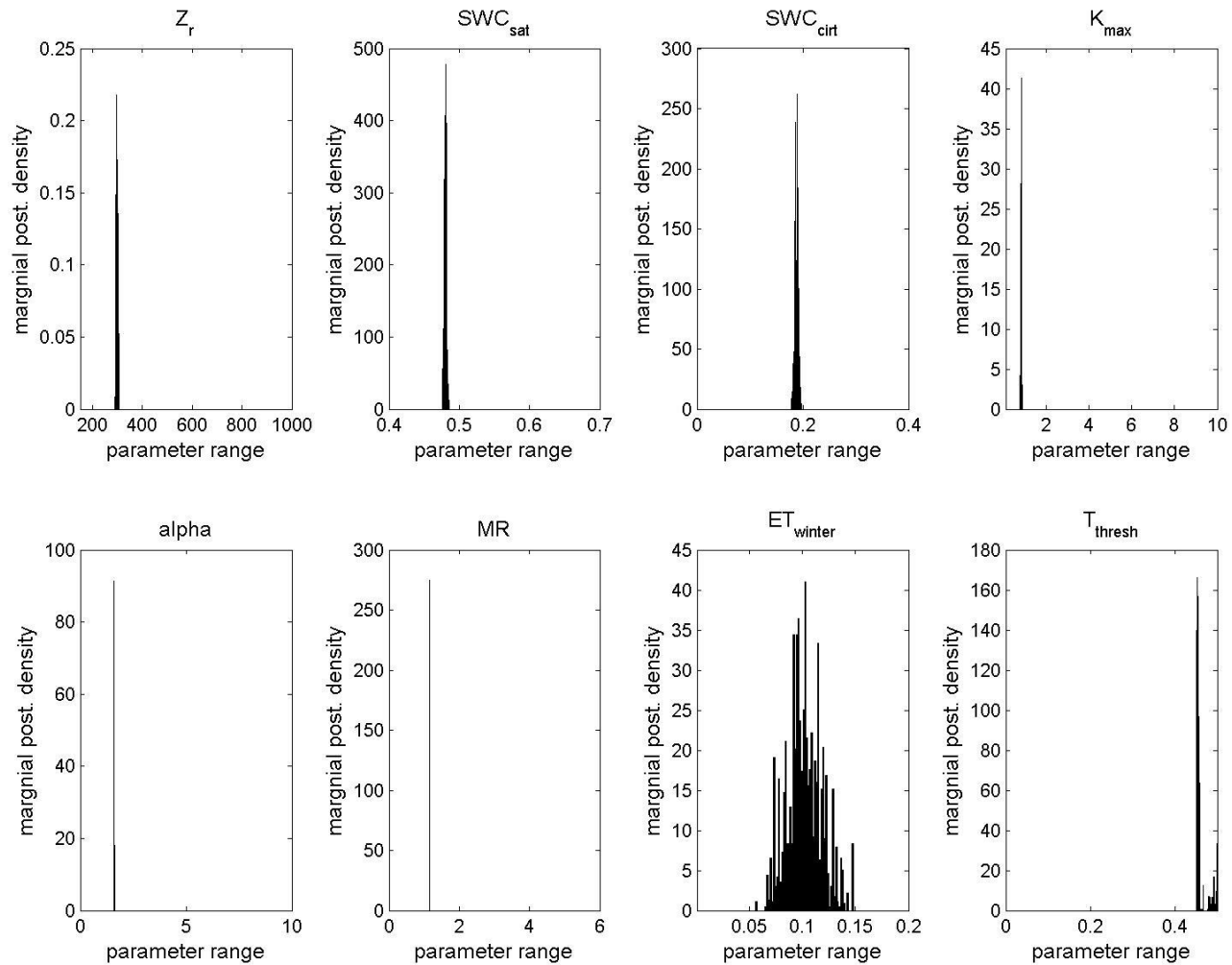


SOIL-BUCKET | PERFORMANCE



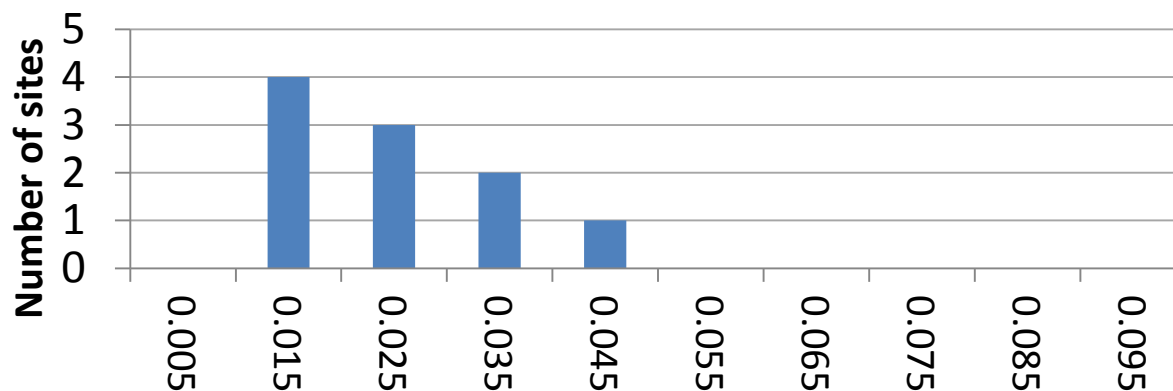


SOIL-BUCKET | PARAMETER ESTIMATES

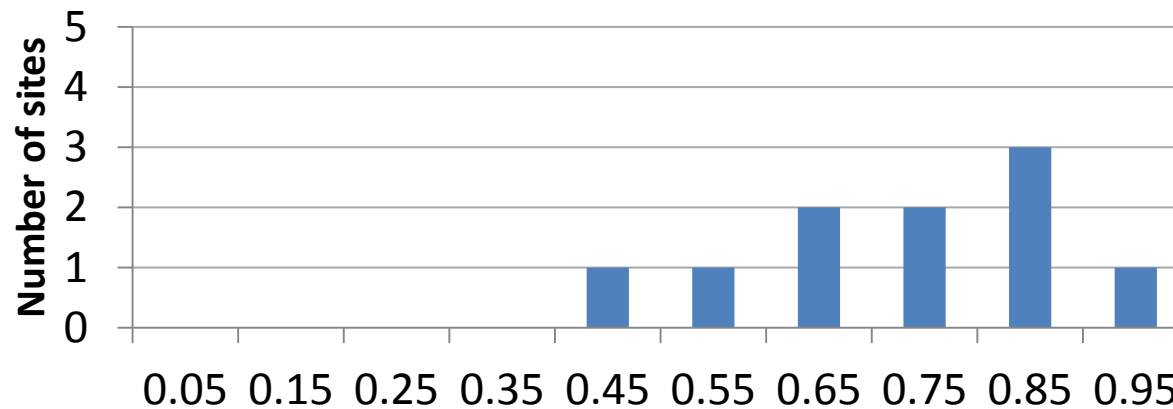




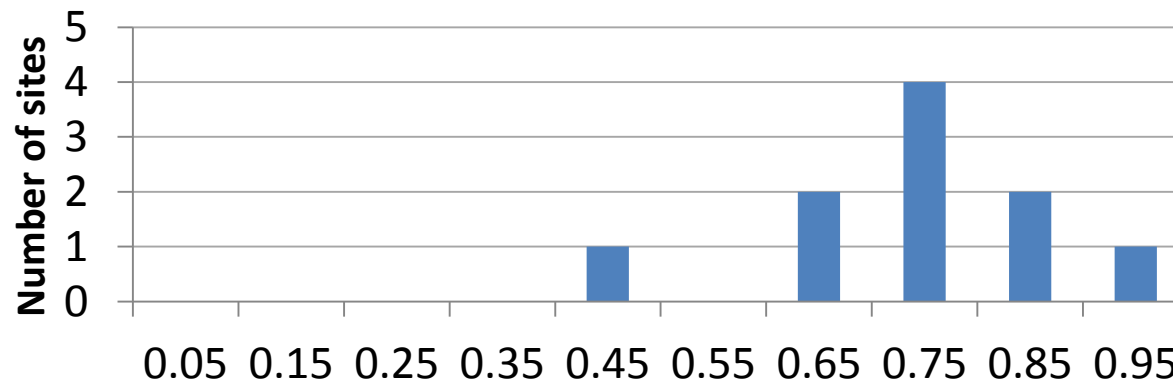
RMSE



R^2

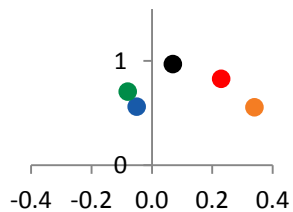
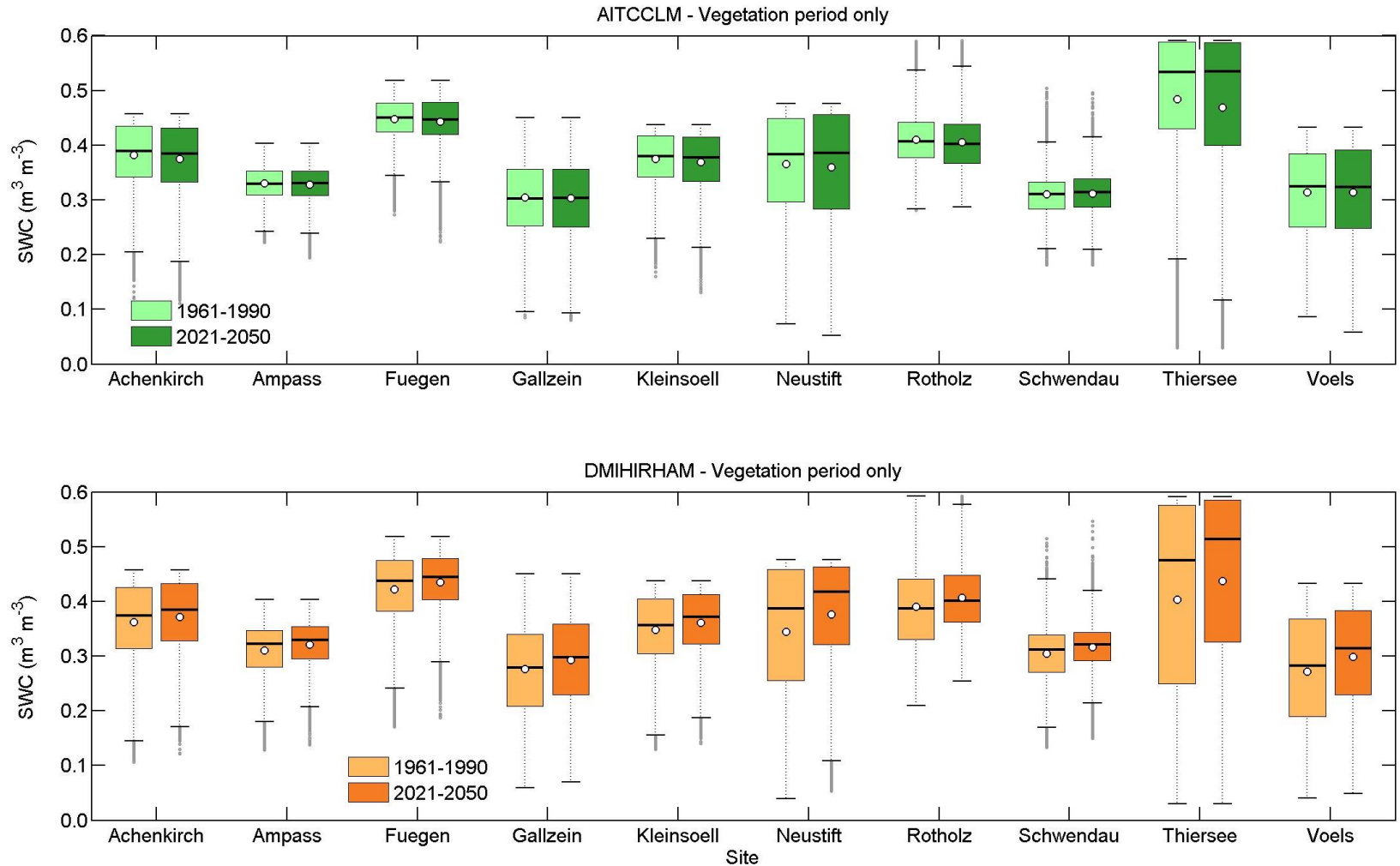


slope





SOIL-BUCKET | SCENARIOS - 1961-1990 vs 2021-2050



ETHZCLM

CNRMCM4.5

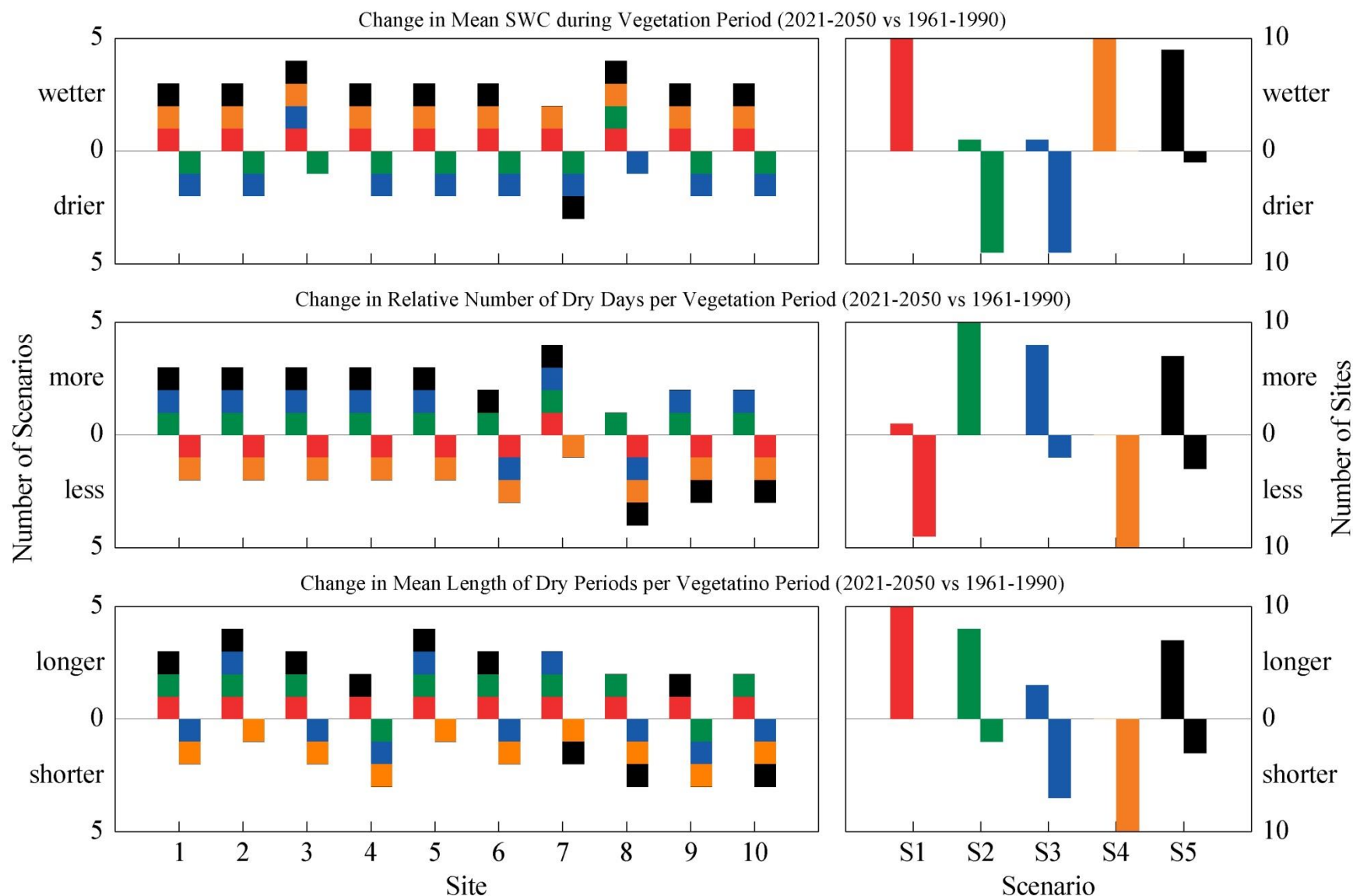
AITCCLM

DMIHIRHAM

KNMIRACMO



SOIL-BUCKET | CHANGES IN SWC - 1961-1990 vs 2021-2050



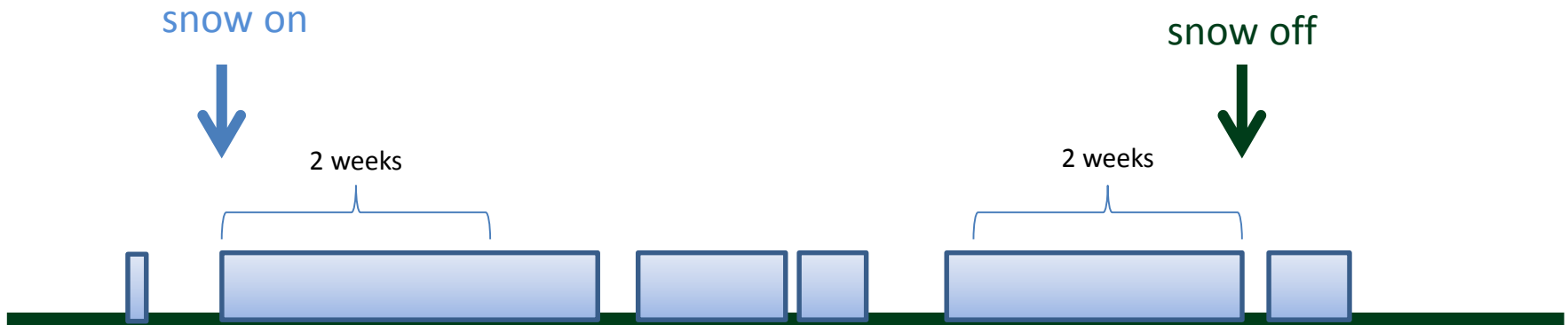
ETHZCLM

CNRM4.5

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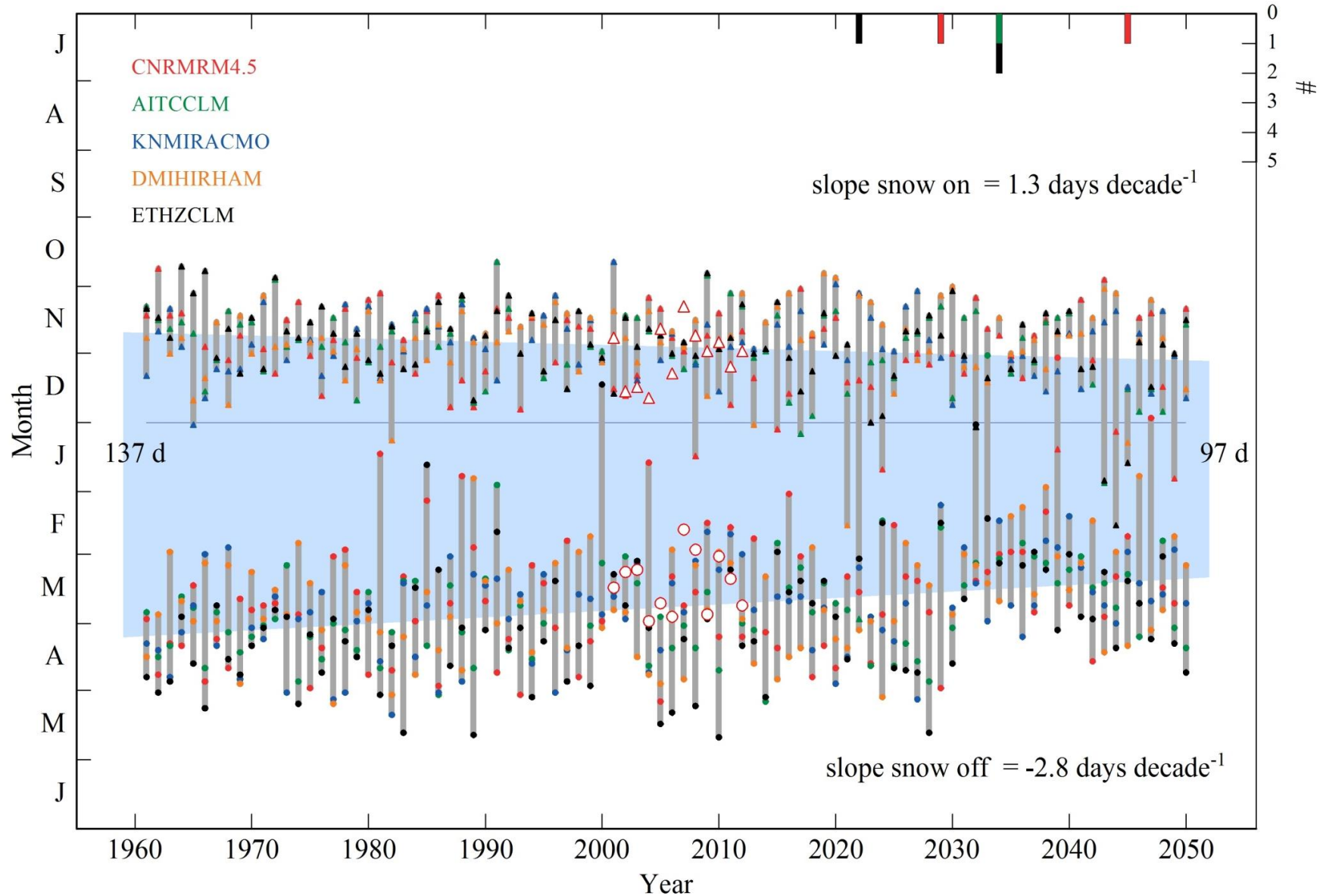
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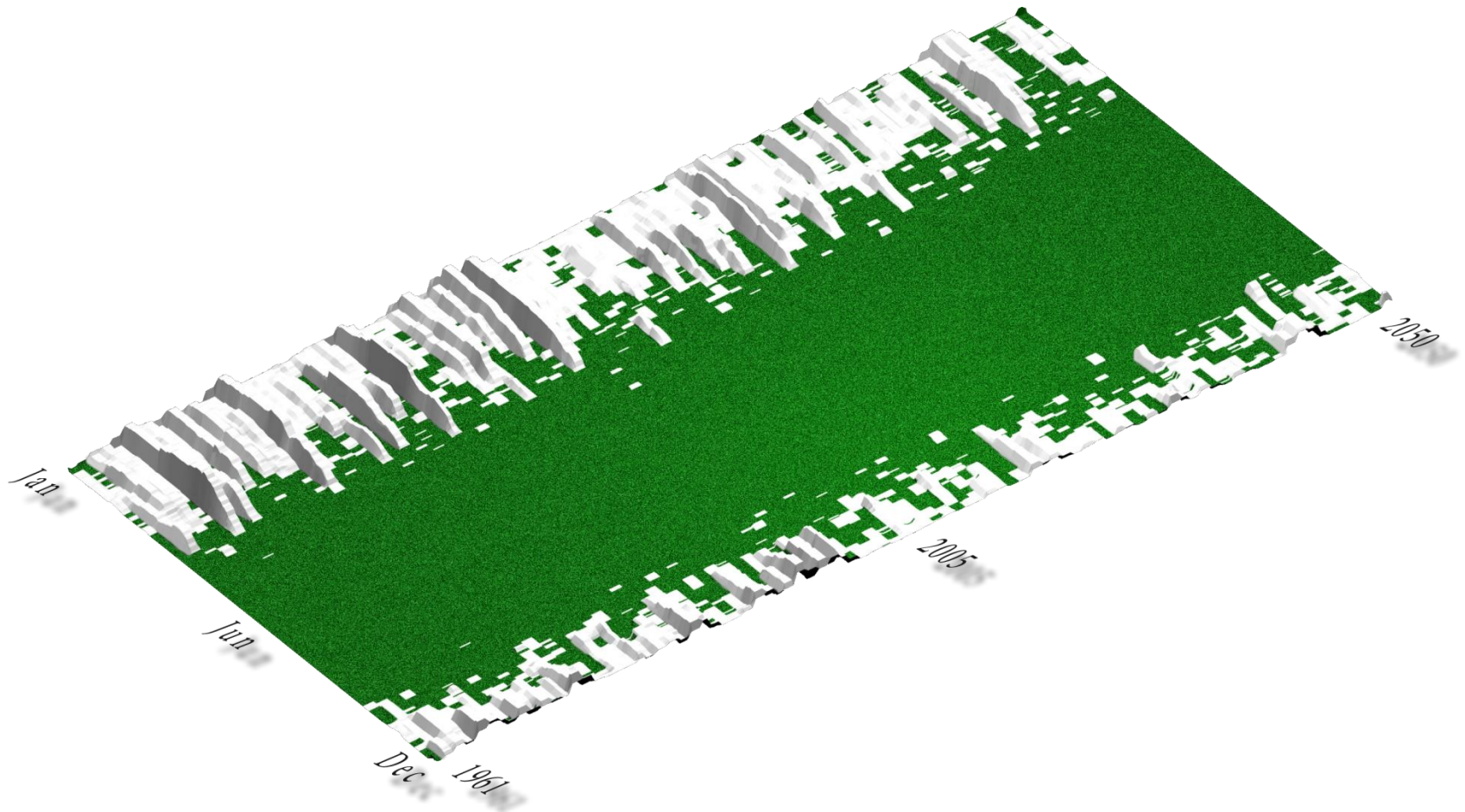
KNMIRACMO





SOIL-BUCKET | SNOW COVER DURATION







„SoilBucket“

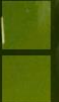
- (i) Efficient
- (ii) Good performance
- (iii) Broad range of application

SWC-trends

- (i) no clear trend among the different scenarios concerning SWC
- (ii) majority of scenarios leads to wetter conditions on average
- (iii) relative number of dry days does not show any clear trend
- (iv) length of dry periods is more likely to increase than not

Snow cover

- (i) less days with snow cover – increase in vegetation period length

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