



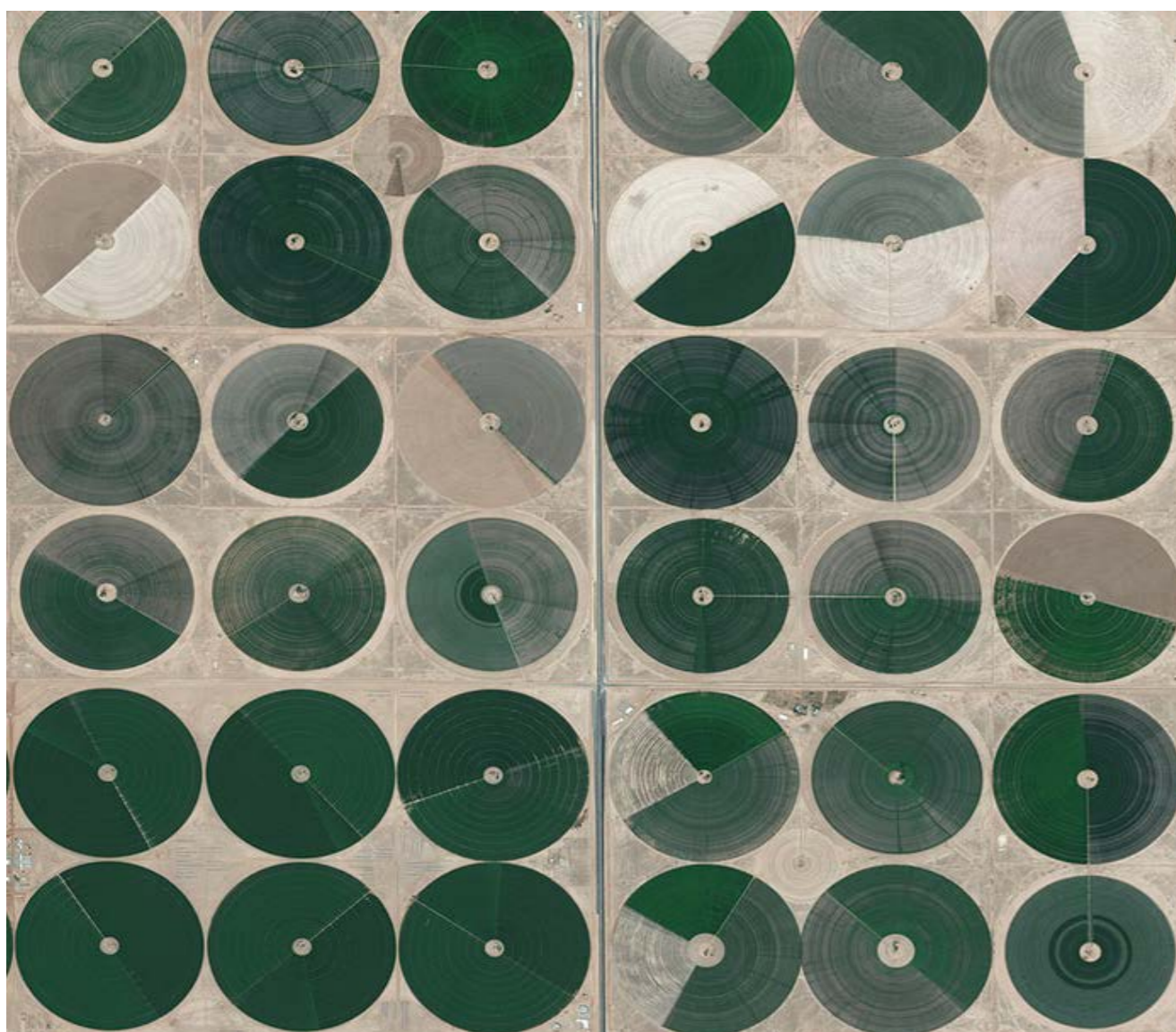
# Mapping irrigated cropland from satellite and model soil moisture data over the contiguous US

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# Irrigation is transforming the water cycle



**~70%** of global  
freshwater withdrawals

[UN-Water Report, 2012]

- Scientists and water managers need accurate and timely information about the extent and amount of irrigation
- existing geospatial irrigation maps rely on a combination of remotely sensed parameters and irrigation statistics -> subject to human manipulation
- Microwave soil moisture retrievals have been less widely considered in this scope
- the sensing characteristics of the measurement platforms can assist irrigation monitoring with high temporal resolution + independent of clouds/daytime

# Our approach

- key assumption: irrigation is observable in remotely sensed SM estimates, but is not accounted for by current land surface models
- large-scale irrigation patterns are derived from differences in temporal soil moisture variations between remotely sensed and modelled SM

