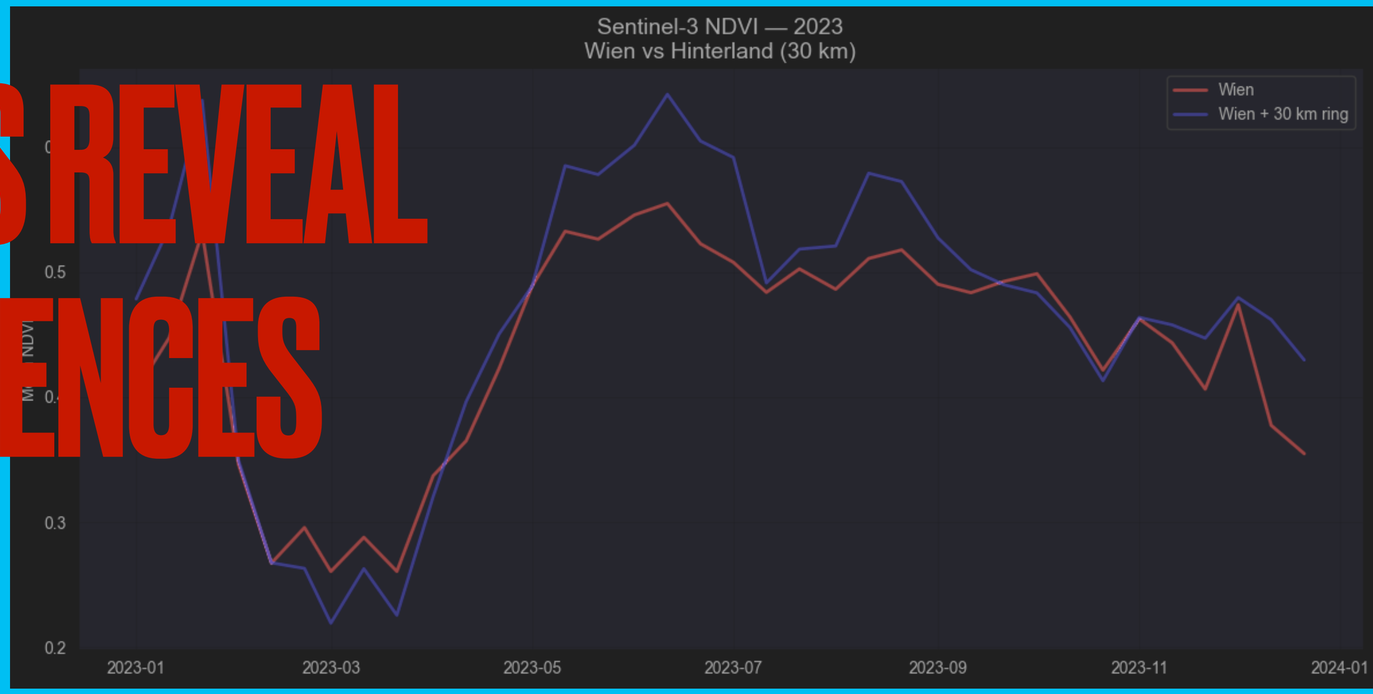
LATENT-SPACE[16]

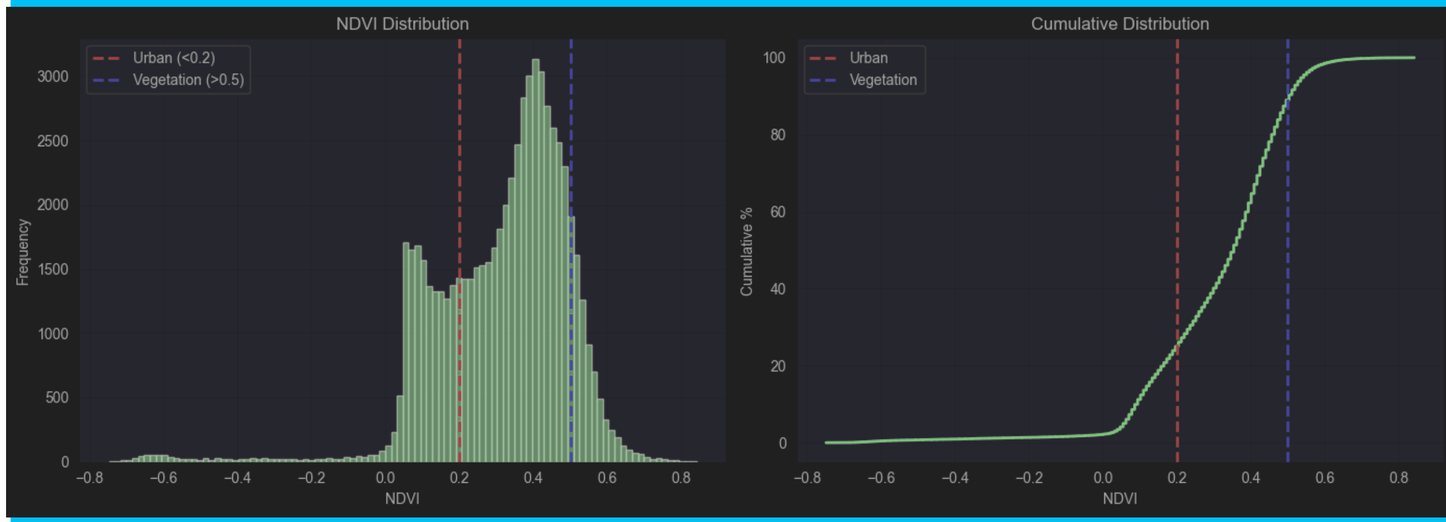
WEEK 2 [GenHack] – THE URBAN HEAT ISLAND EFFECT

Wien : A Climate-Sensitive Central European Capital

VEGETATION PATTERNS REVEAL URBAN–RURAL DIFFERENCES

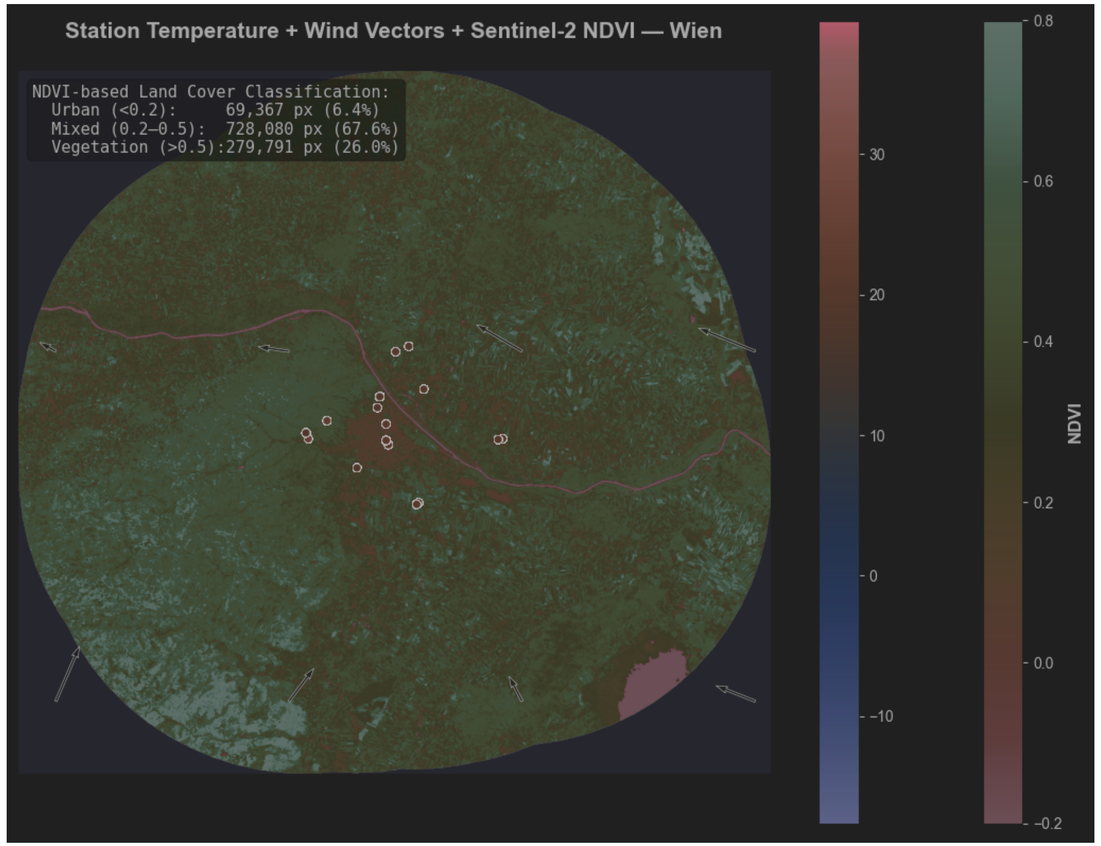


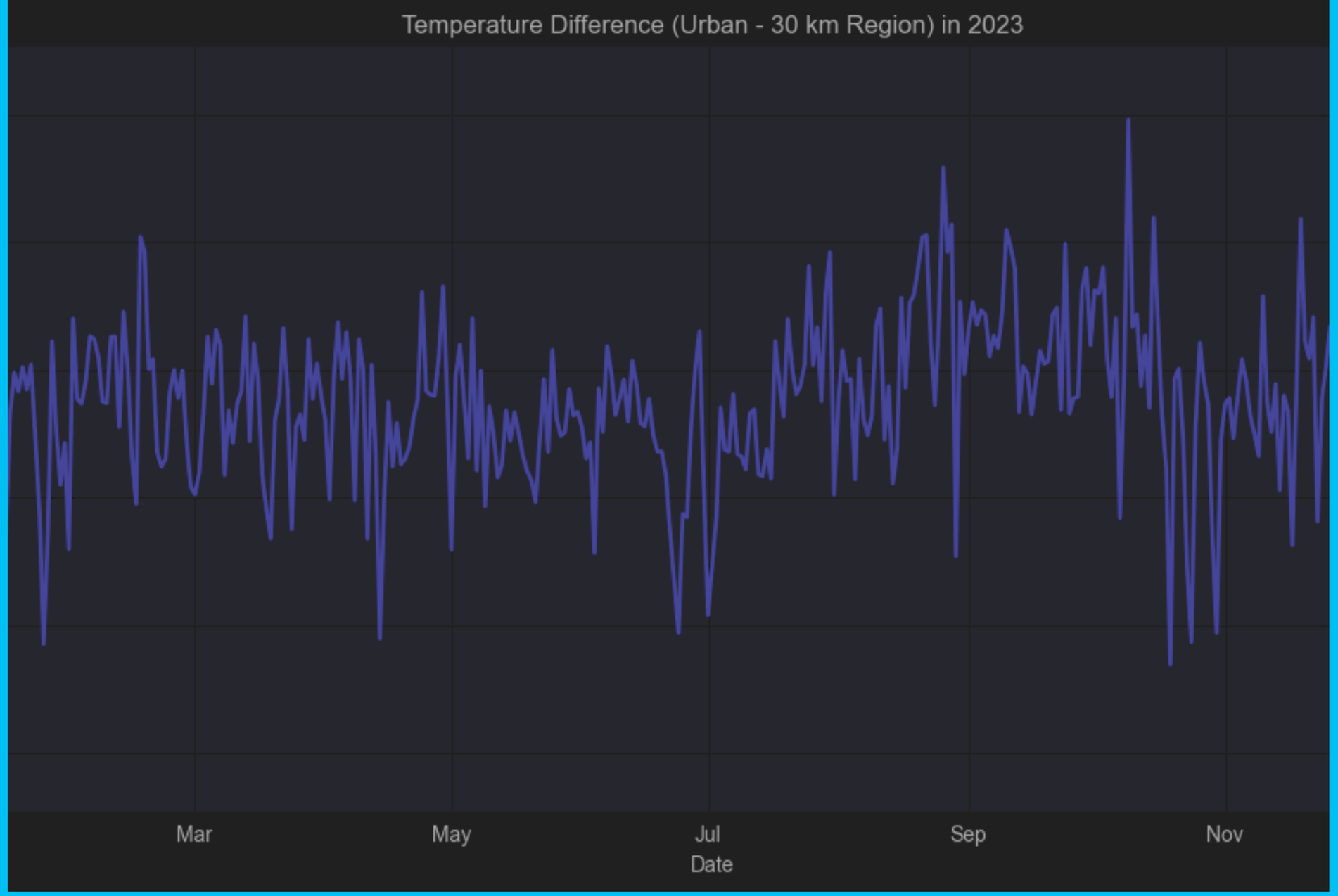
- *Urban areas show consistently lower NDVI than the 30-km hinterland*
- *Sentinel-3 seasonality shows clear green-up, summer peak, autumn decline*
- *NDVI histogram and CDF confirm Wien's vegetation deficit — a key driver of UHI*



LOW NDVI URBAN CORE → LESS EVAPORATIVE COOLING

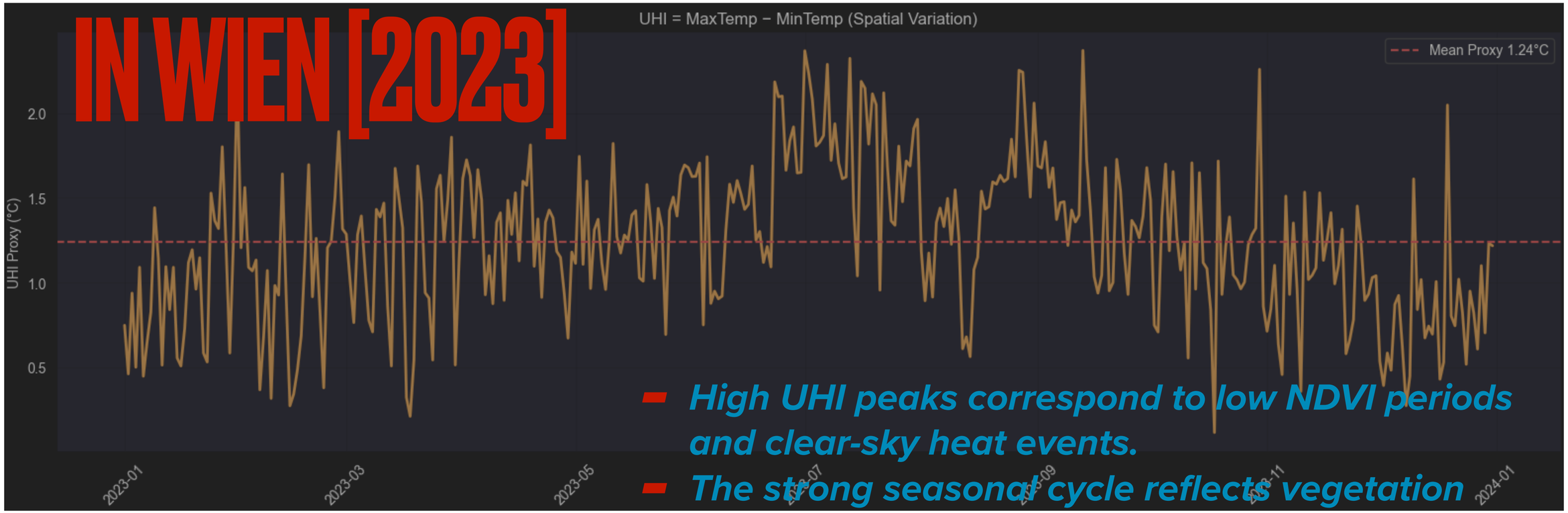
→ HIGHER TEMPERATURES





Urban–Rural Temperature Contrast Across the Year

DAILY URBAN HEAT ISLAND INTENSITY IN WIEN [2023]



- *High UHI peaks correspond to low NDVI periods and clear-sky heat events.*
- *The strong seasonal cycle reflects vegetation dynamics and urban morphology*
- *Persistent daily UHI contributes to increased cooling demand, heat-stress exposure, and air-quality impacts*