

# Floodplain Heterogeneity: Preliminary Results from North American Prairies



WARNER COLLEGE  
OF NATURAL RESOURCES  
COLORADO STATE UNIVERSITY

Emily Iskin & Ellen Wohl

Geosciences Department, Warner College of Natural Resources, Colorado State University

## Floodplain Heterogeneity...

Refers to the spatial differences of topography, vegetation, grain size and texture, soil moisture, and ponded or flowing water

- ⇒ Is driven by active channel movement across the valley bottom
- ⇒ Is important because it impacts storage of water, sediment, solutes, and organic matter
- ⇒ Is largely unquantified!

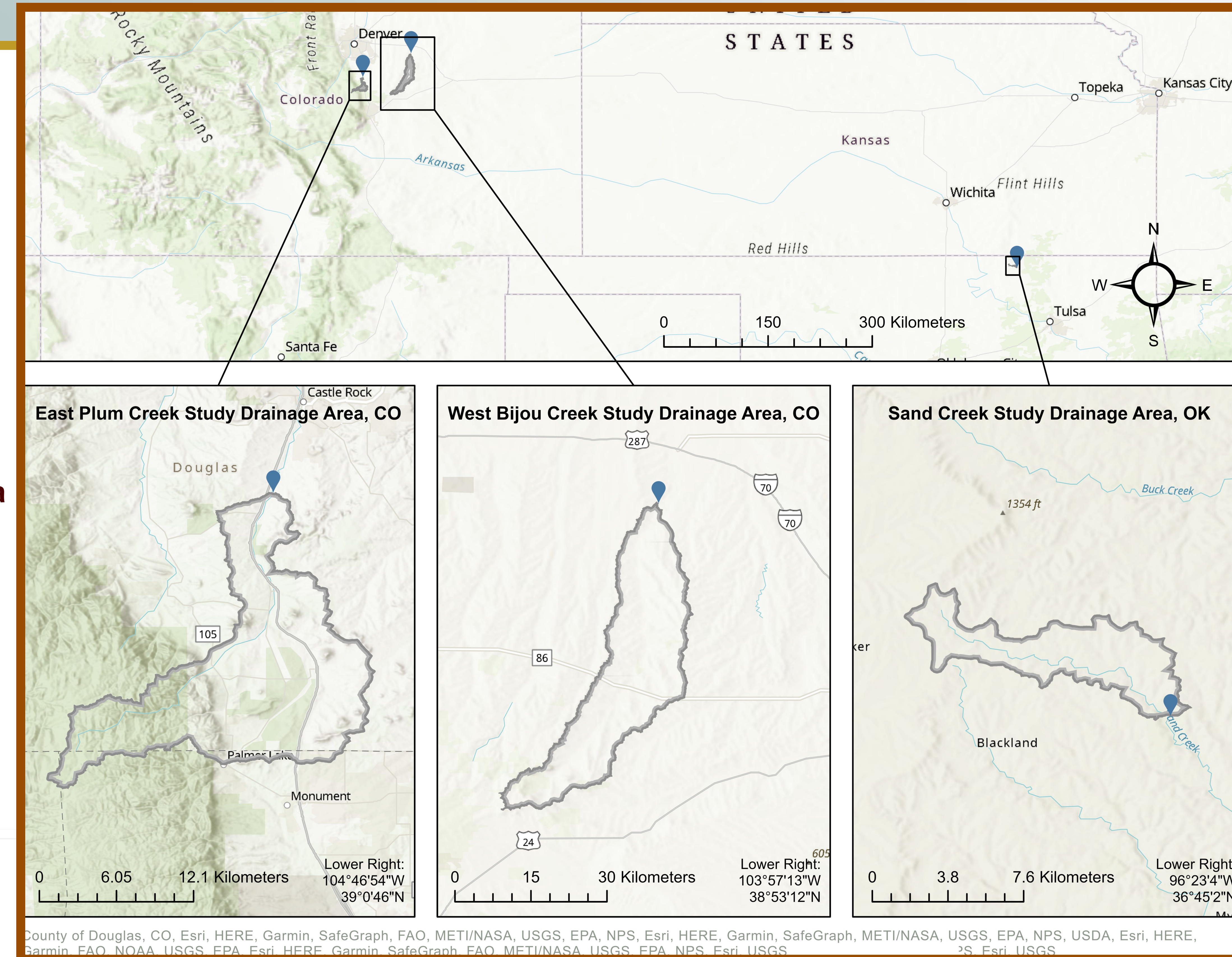
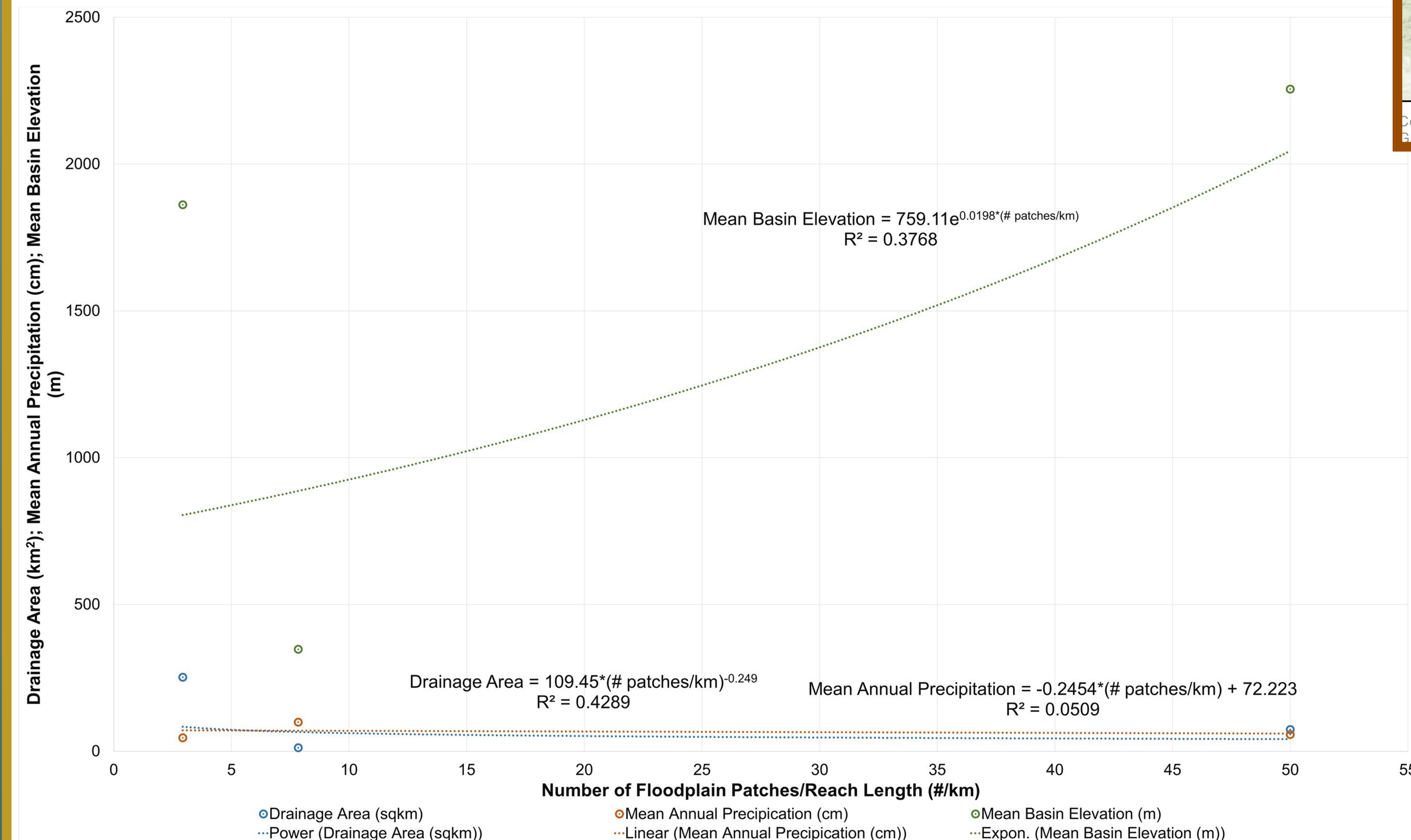
## Data

**Study Areas: East Plum Creek and West Bijou Creek, Colorado and Sand Creek, Oklahoma**

- ⇒ **Field Data:** GPS locations of reaches, floodplain patches, and large wood
- ⇒ **USGS StreamStats Data:** Drainage area, mean basin slope, mean basin elevation, mean annual precipitation, and others
- ⇒ **Heterogeneity Metric:** simple calculation of number of patches per km of river reach

## Result

**Heterogeneity Metric increases with Drainage Area, decreases with Precipitation and Elevation**



## Ongoing Research

This is part of a much larger study that includes:

- ⇒ 24 study reaches spanning from interior Alaska to coastal Georgia
- ⇒ Detailed field data collection on patch type, based on geomorphology, vegetation, and topography
- ⇒ Subsurface measurements of soil texture via soil cores and surface measurements of floodplain wood load
- ⇒ Detailed remote sensing of study sites and floodplain classification
- ⇒ Calculation of many heterogeneity metrics from Landscape Ecology
- ⇒ In-depth multi-variate analysis across study sites

**[Stay tuned!]**

References

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