Enregistrement

Vous voyez actuellement l'écran de Jafar Anbar | Options d'affichage

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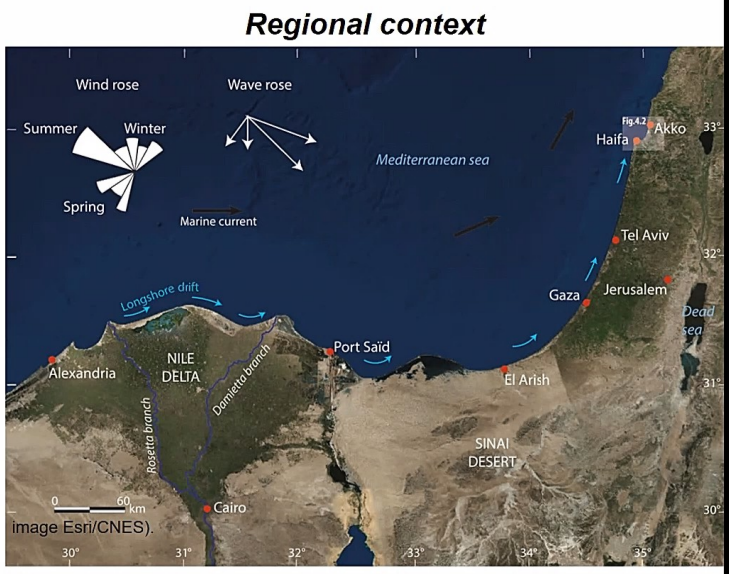
Main questions

- Relative sea-level changes
- Shoreline deformations / sedimentary budget
- Anthropogenic impacts
- Natural hazards / neo-catastrophism
- Archaeological conservation



Paramètres audio | Discussion | Lever la main | Q. et R. | Quitter

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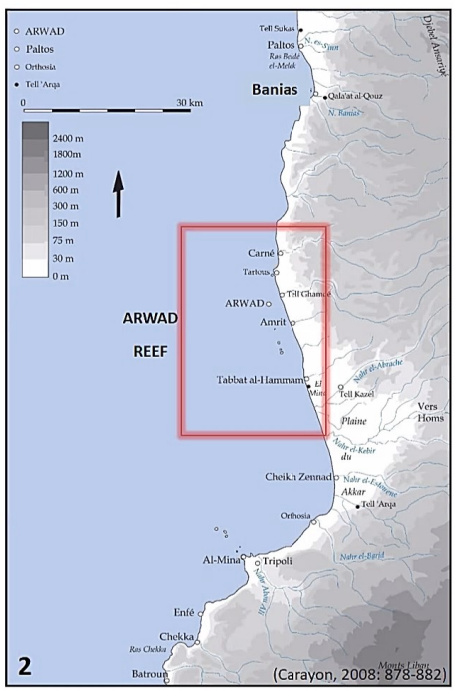
Ancient ports and harbour-cities on the Syrian coast



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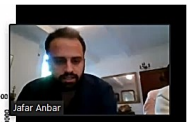
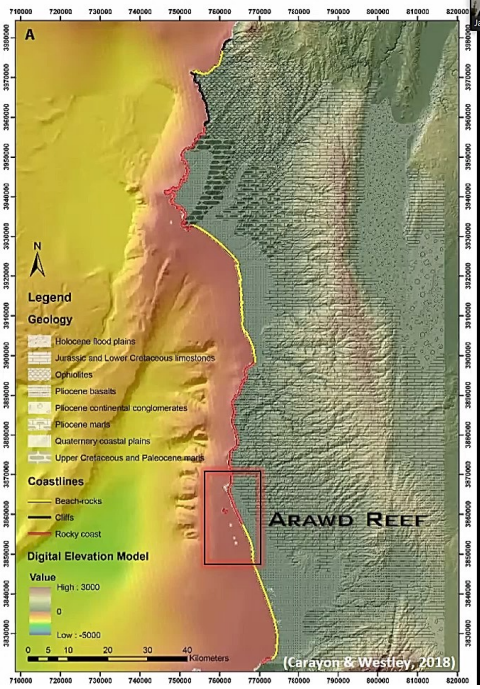
The Geomorphological Setting



Need of palaeo-environmental coastal landscape reconstruction

In the eastern Mediterranean, the sediments are drifted along the shore towards the north by the prevailing **current**.

The Syrian coast is characterised by **heavy sedimentation** with **prograding beaches** and **coastal erosion with formation of beachrock**.



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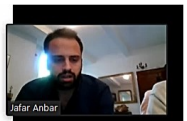
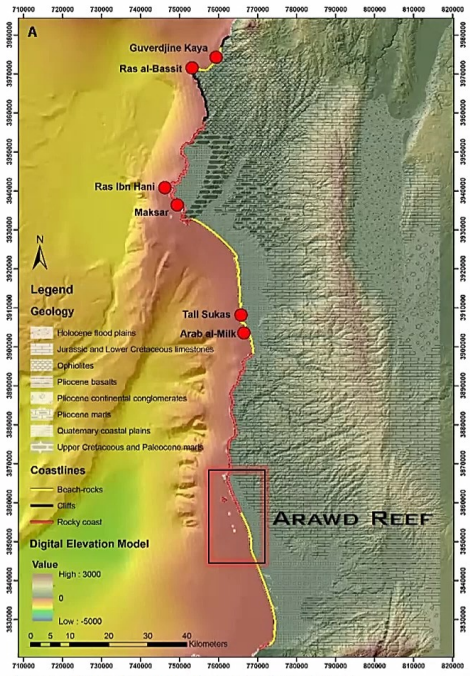
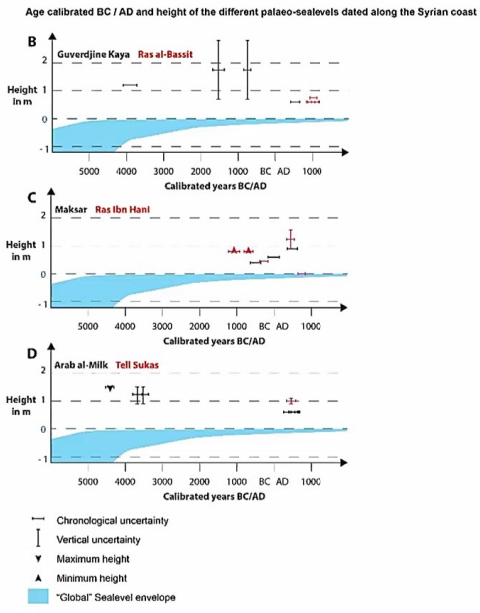
Sea Level Changes and Tectonics





(Carayon & Westley, 2018, *after Sanlaville et al. 1997*)



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The Phoenician site of Arwad

Multi-functions harbour installations, submerged structures, built and rock cut, coastal fortification, rock-cut features, artificial basin?

Machroud island

Quarry, anchorage, rock-cut features, submerged remains and submerged rock-cut channel.

Study zone - Archaeological sites

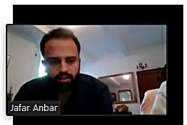
Need of systematic archaeological research

Amrit (marathus)

Port installation composed of several warehouses and a long quay established in an infilled natural lagoon or bay. Coastal erosion.

Tabbat al-Hammam

Harbour installations 8c. BC.
Erosion of the Norther coast and progradation of southern coast.



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Research issues

A- Archaeological issues

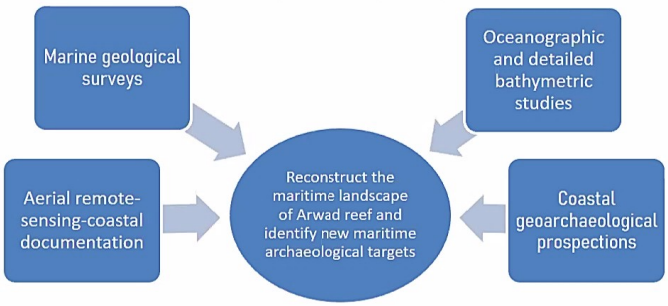
- Assessment (Date, interpretation, construction techniques)
- Need of systematic documentation
- Issues of maritime connectivity

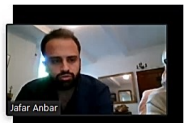
B- Maritime and coastal geoarchaeological issues

- Landscape reconstruction of Arwad reef

(Sea-level change, geohazards and bathymetry recording)

Interdisciplinary methodologies





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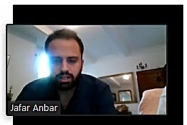

Interdisciplinary methodologies

1. Aerial remote-sensing coastal documentation

Remote Sensing Laboratory of the National Technical University of Athens.

RSLab
Remote Sensing Laboratory
National Technical University of Athens

2. Marine geophysical surveys (ROV survey, multi-beam echo-sounder)

Department of Geology and Geoenvironment of National and Kapodistrian University of Athens.

National and Kapodistrian University of Athens

- Oceanographic and Detailed bathymetric studies
- Submerged landscapes mapping
- Geohazards and tectonic movements

3. Coastal Geo-archaeological prospection

European Centre for Research and Education of Environmental Geosciences

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CENTRE EUROPÉEN
DE RECHERCHE ET D'ENSEIGNEMENT
DES GÉOSCIENCES DE L'ENVIRONNEMENT

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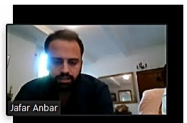

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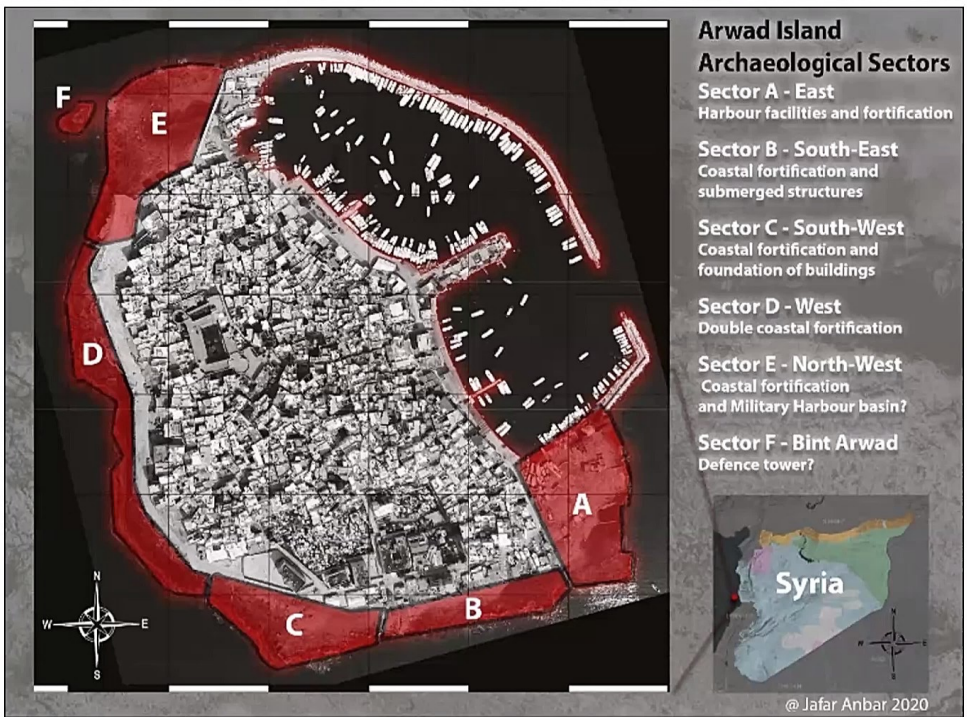

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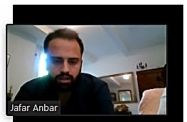

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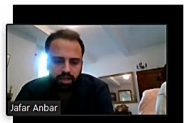

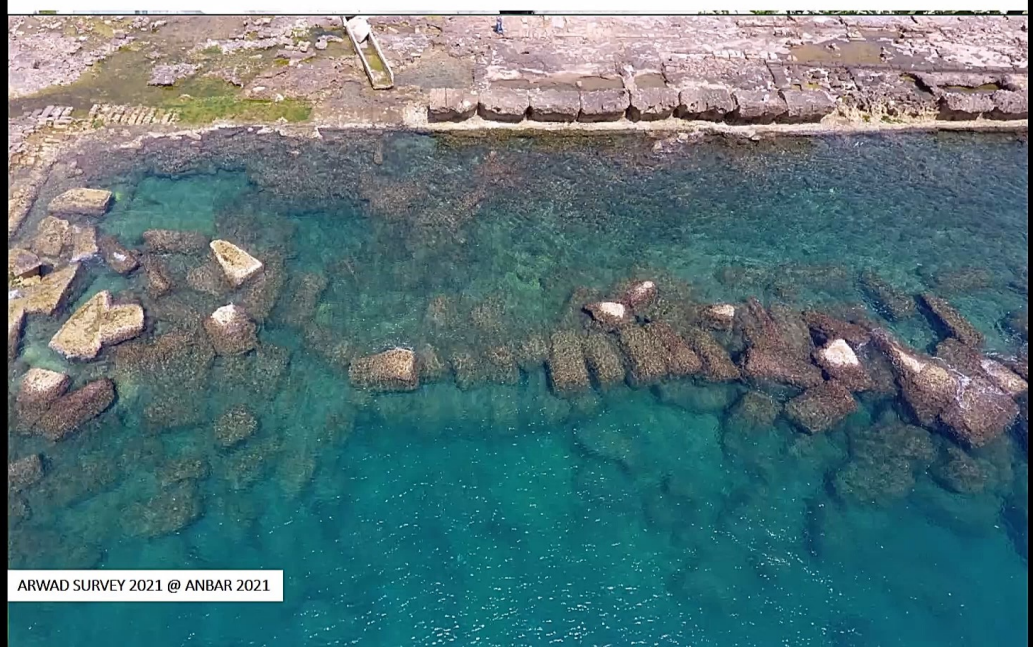

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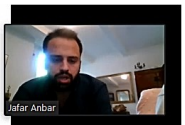

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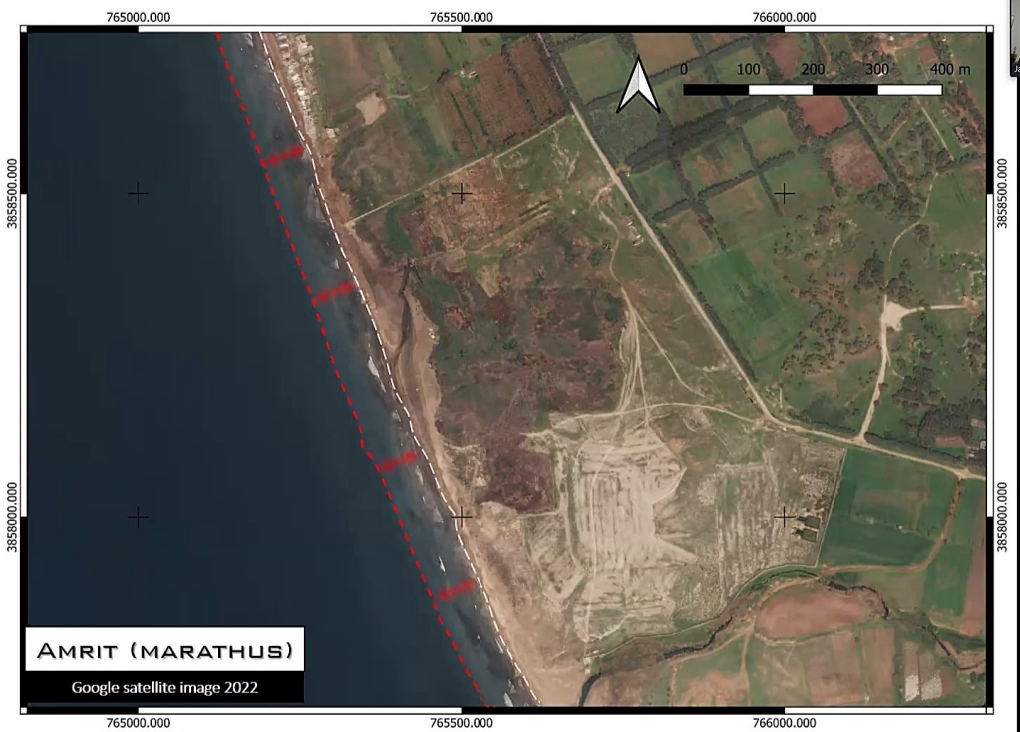

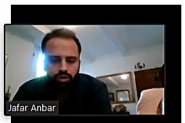

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1. Aerial remote-sensing/coastal documentation

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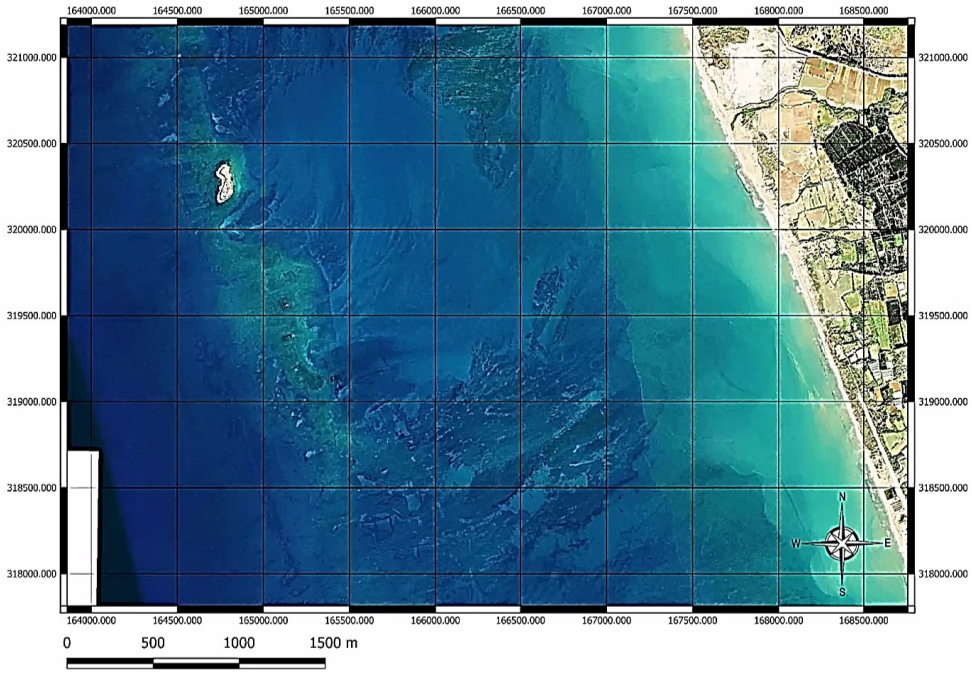
2. Marine geophysical surveys

submerged landscape mapping



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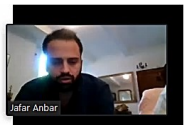
3. Geo-morphological Prospection

In red: Potential geoarchaeological archives to be investigated at Arwad



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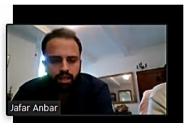
3. Geo-morphological Prospection

The archaeological site of Amrit harbour Aerial photogrammetry – @ ANBAR 2021



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New insights into the palaeoenvironmental changes around Akko since the Bronze Age and related location of the ancient harbours

Aerial picture of Tel Akko (M. Artzy

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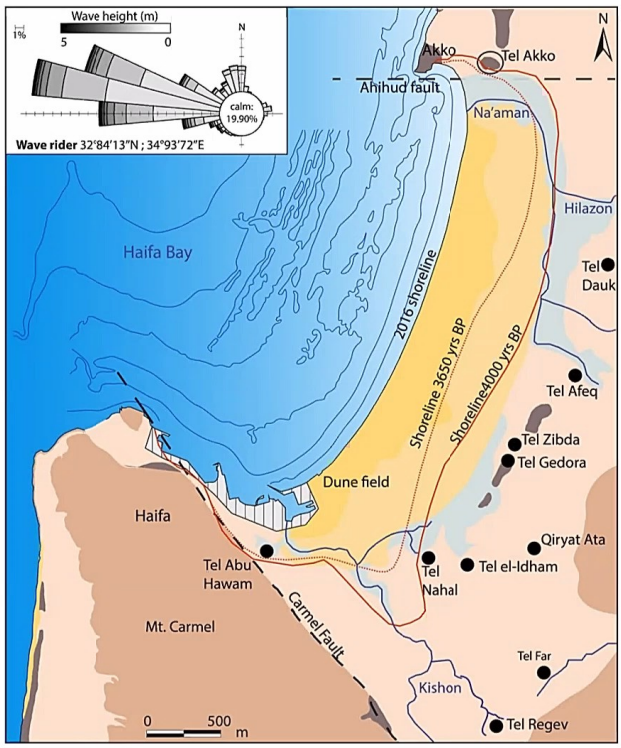
Geomorphology of the Haifa Bay



Geomorphological map of the Haifa Bay. Localisation of the tells, 4000 years BP shore line position, bathymetry and wave rose after Zviely et al., 2007. 3650 years BP shoreline after Porat et al., 2008.

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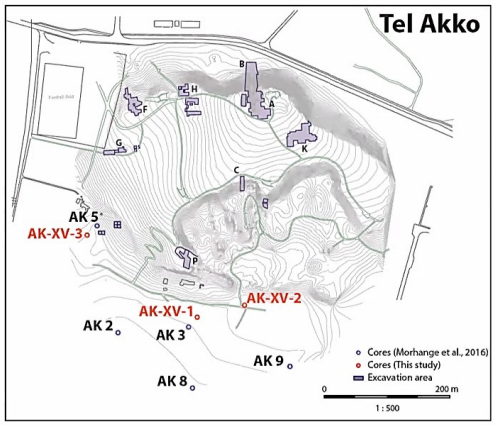
Location of the cores



Location of the cores, image Esri/CNES.

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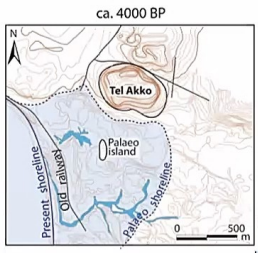
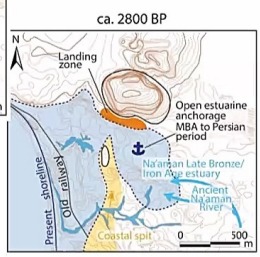
General restitution of the palaeoenvironmental changes

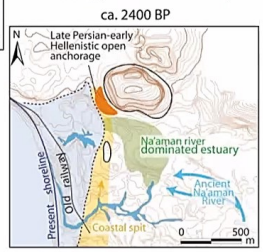


Maximum of the marine ingression



Growth of the sand spit

Infilling of the estuary



Final stage of the Coastal progradation

2016 AD

Coastline changes and location of Tel Akko's ancient harbours through time.

Topography adapted from Treidel map (1925-26).

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Mobility of Akko ancient harbours

Hellenistic harbour

Late Persian/ Early Hellenistic harbour

Bronze/Iron Age harbour

Giaime et al. (2017) *GEOARCAEGEOLOGY*

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AKKO harbour


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