

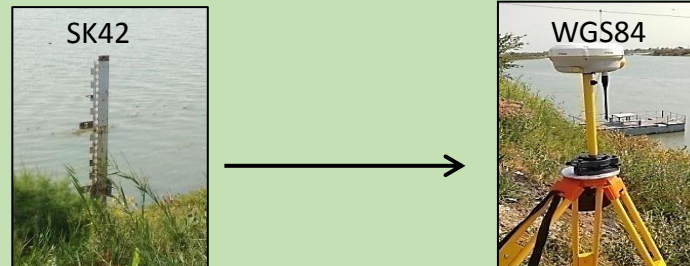


# National University of Uzbekistan

geodesy and geoinformatics department



## GNSS application for hydrology



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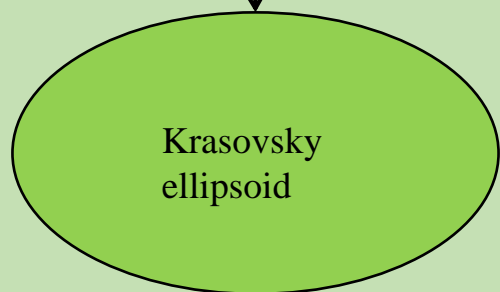
**The 6 EUPOS Council and Technical Meeting**  
**30-31 Oktober, Budapest, Hungary**

### Reference ellipsoids

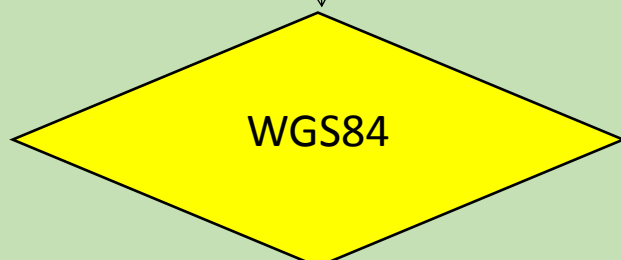
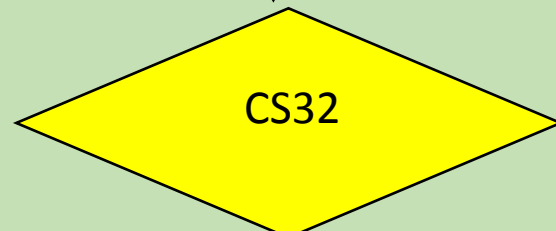
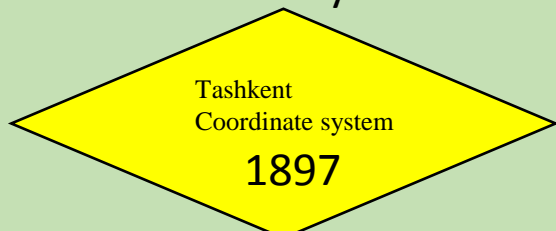
1867-194 Russia, Uzbekistan



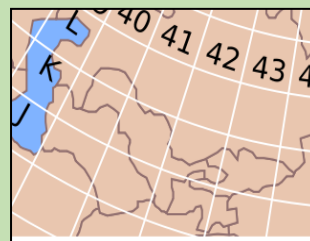
1942-2018  
Russia, Uzbekistan



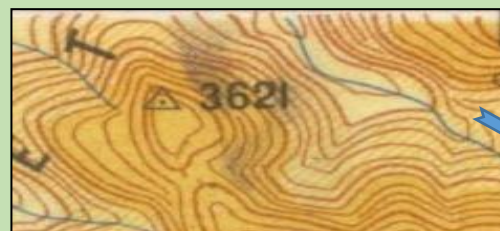
### Reference system Coordinate system



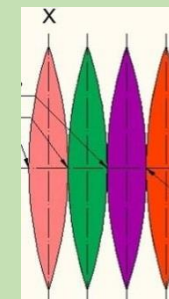
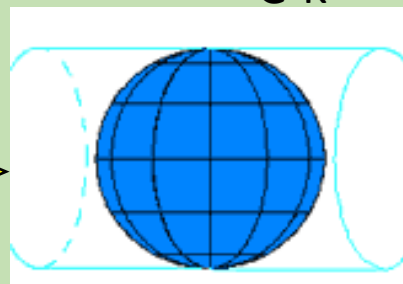
### Reference frame Map projection



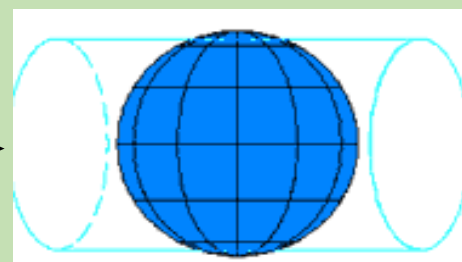
Gauss-Kruger



G-K



UTM



Mapping store - full

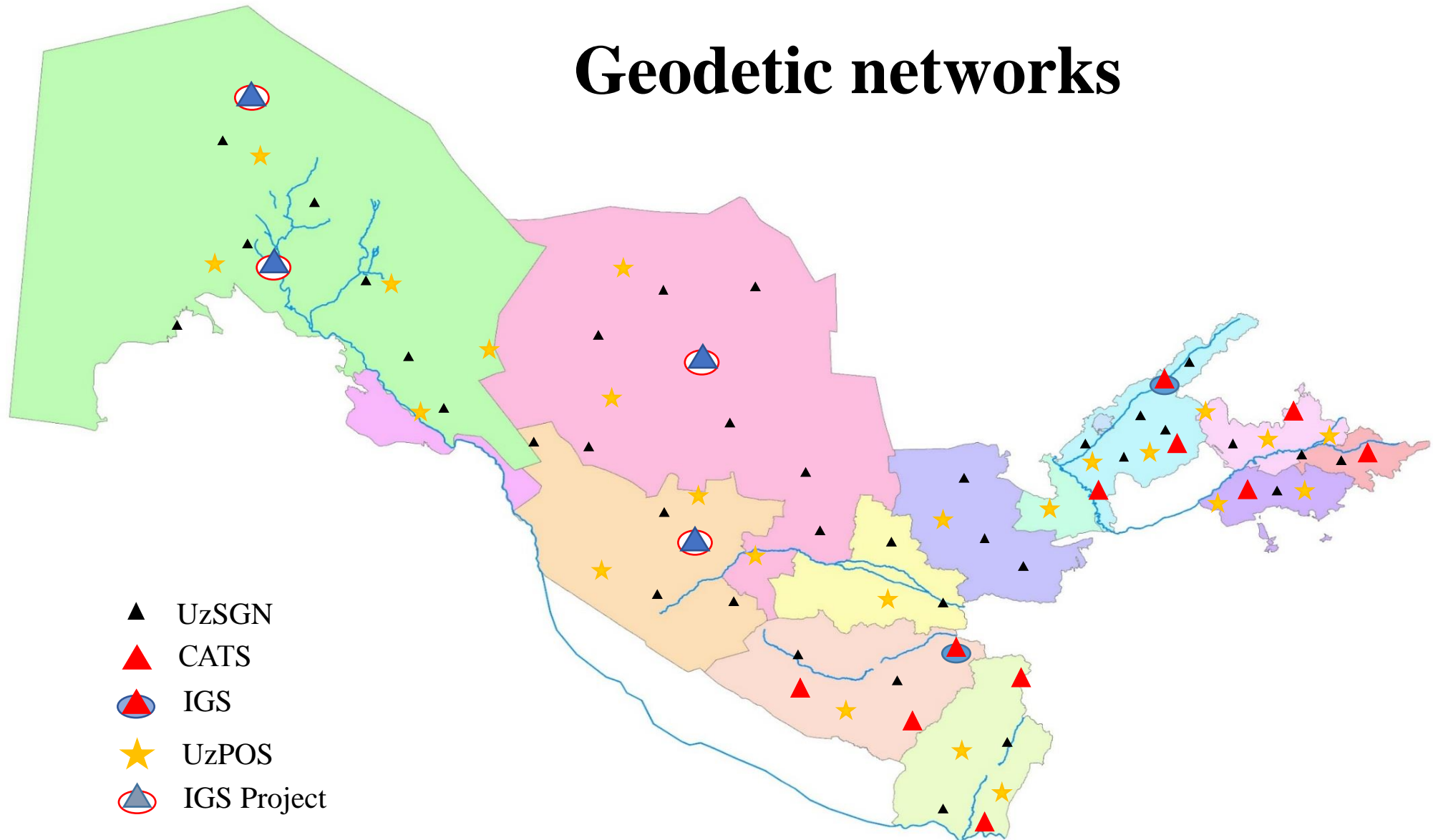


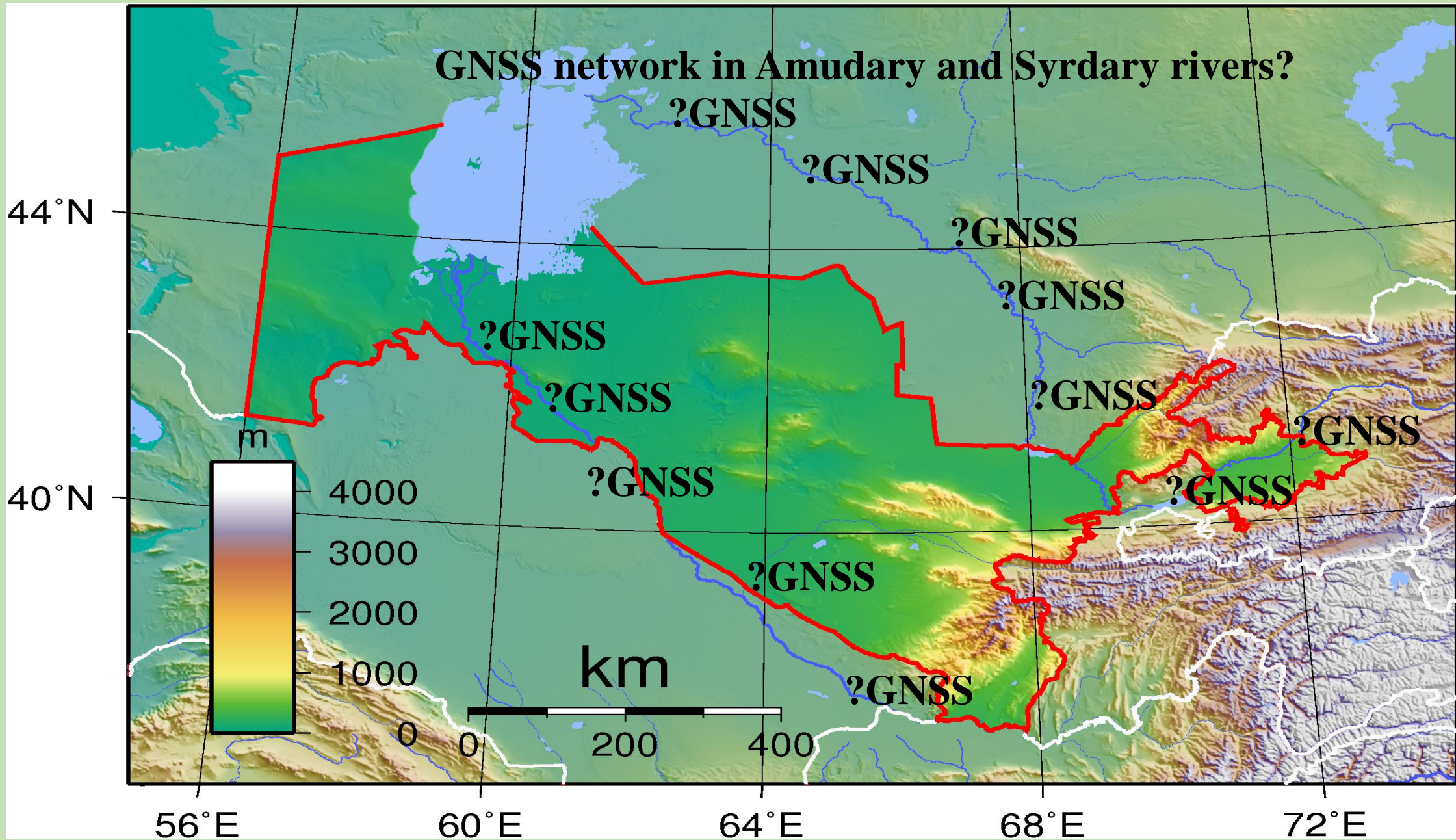
SK42

Mapping store- empty  
WGS84

# UzSGN +CATS +IGS +UzPOS +IGS Project

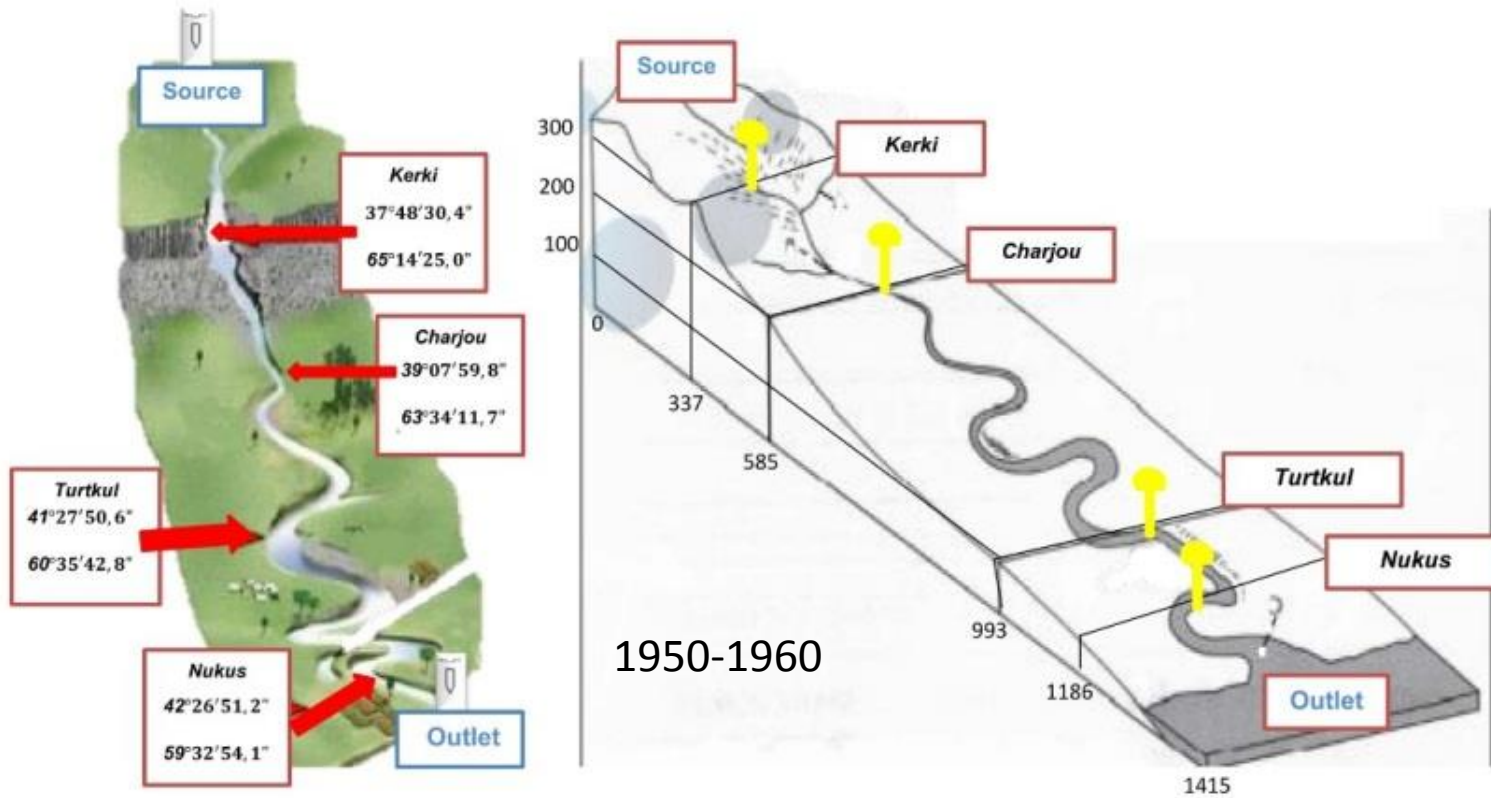
## Geodetic networks





# Hydrology posts of Uzbekistan

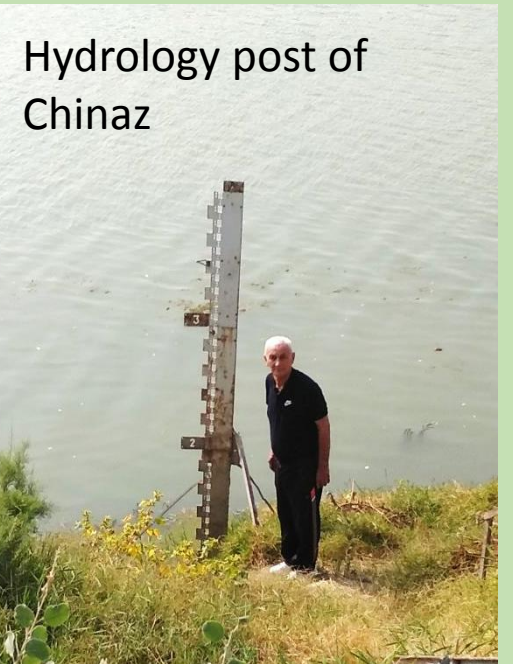
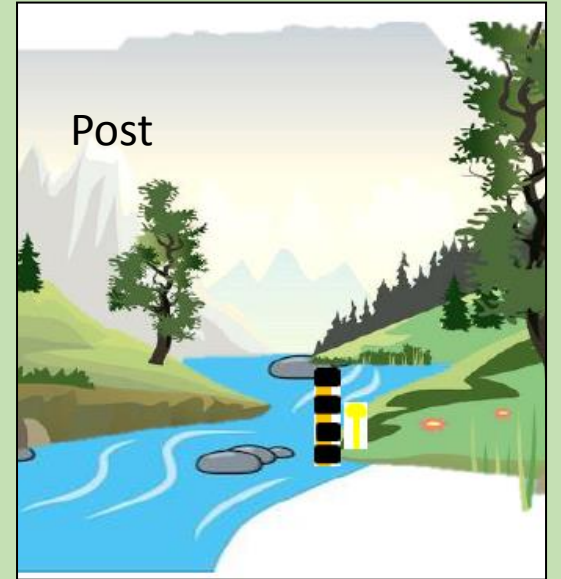
Profile location of the Hydrology posts of the river Amu Darya



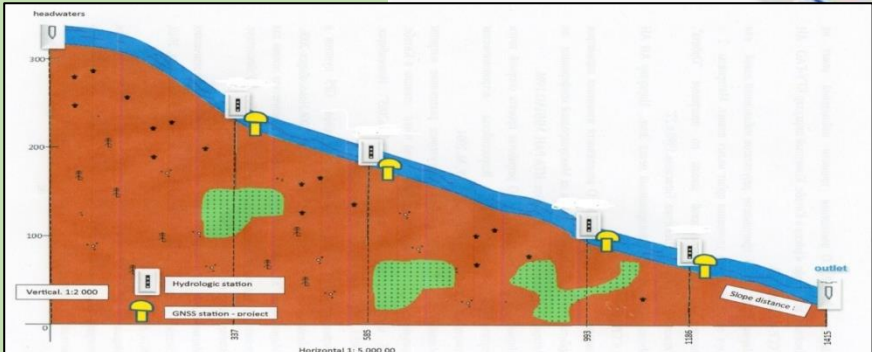
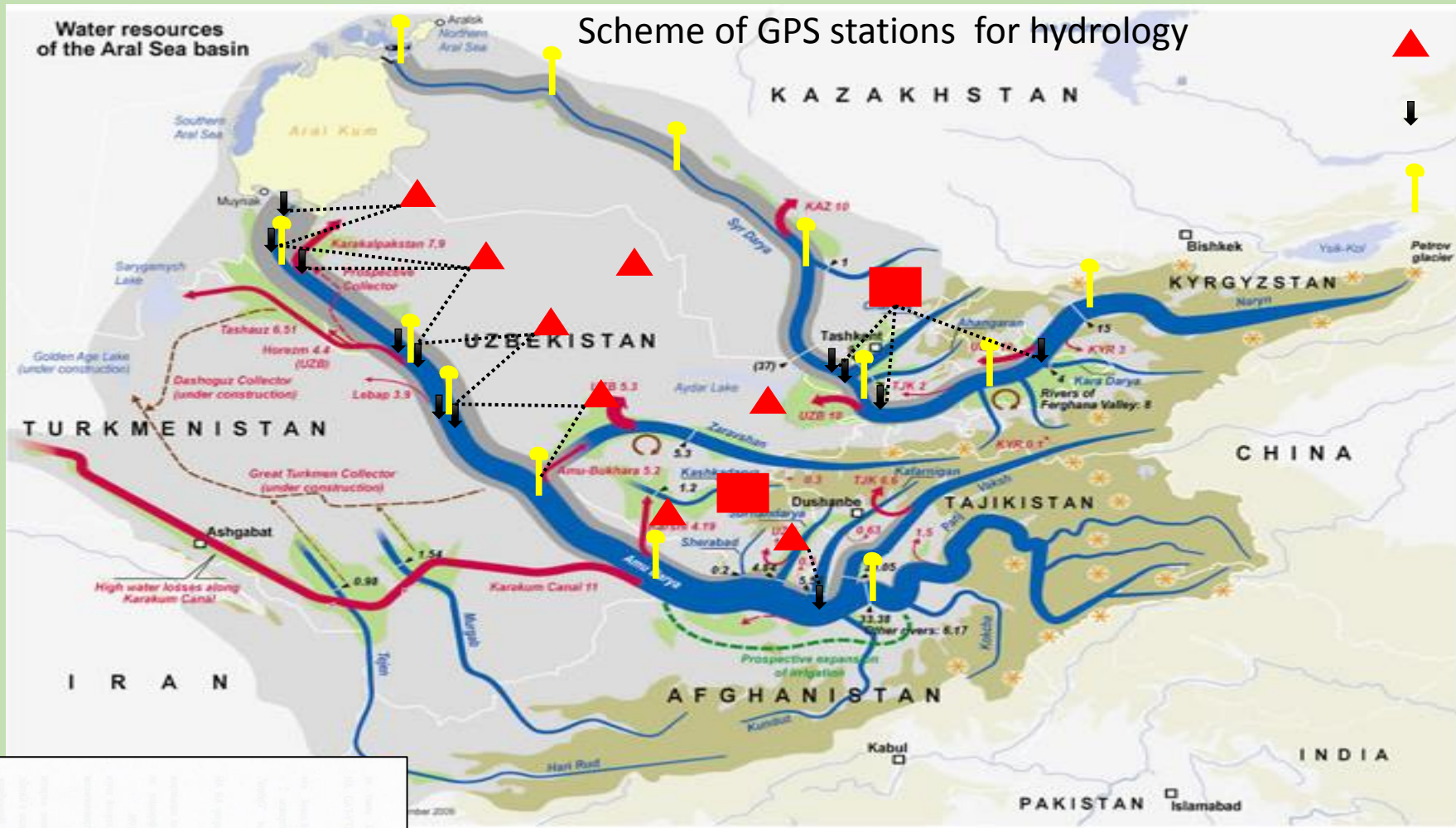
Scale: Ver. 1:2 000

Horiz. 1: 5 000 000

Length of the river: 1415 km



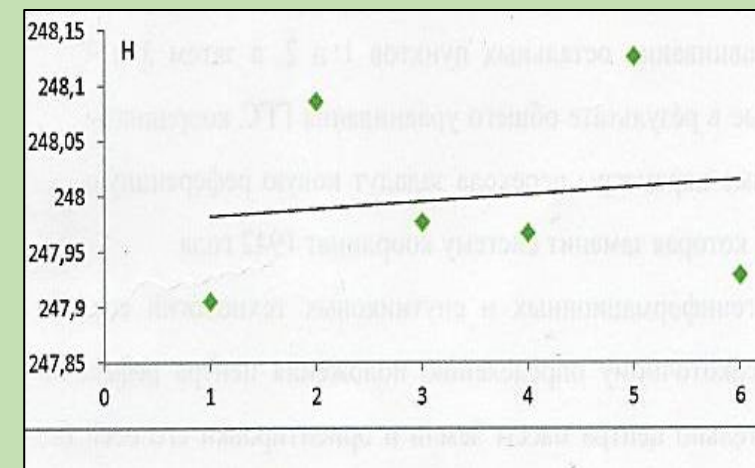
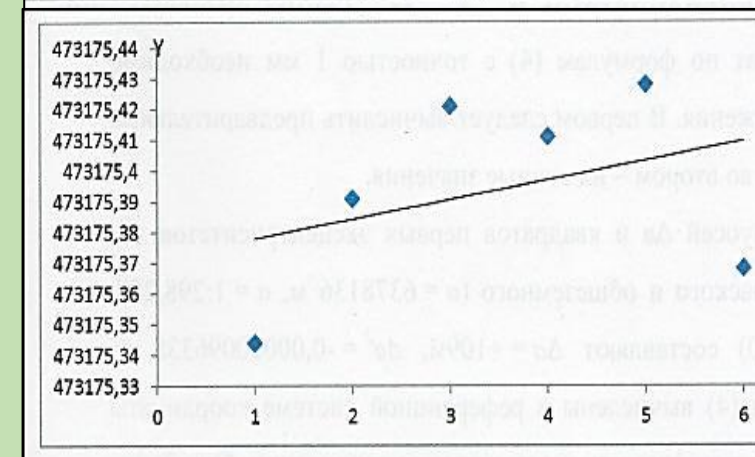
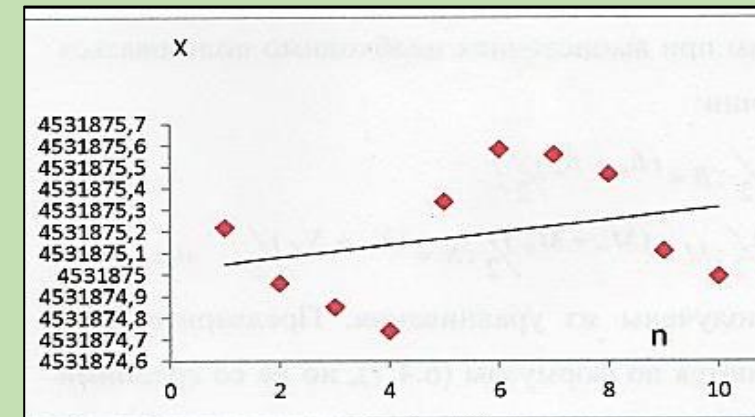
Hydrology post of Chinaz



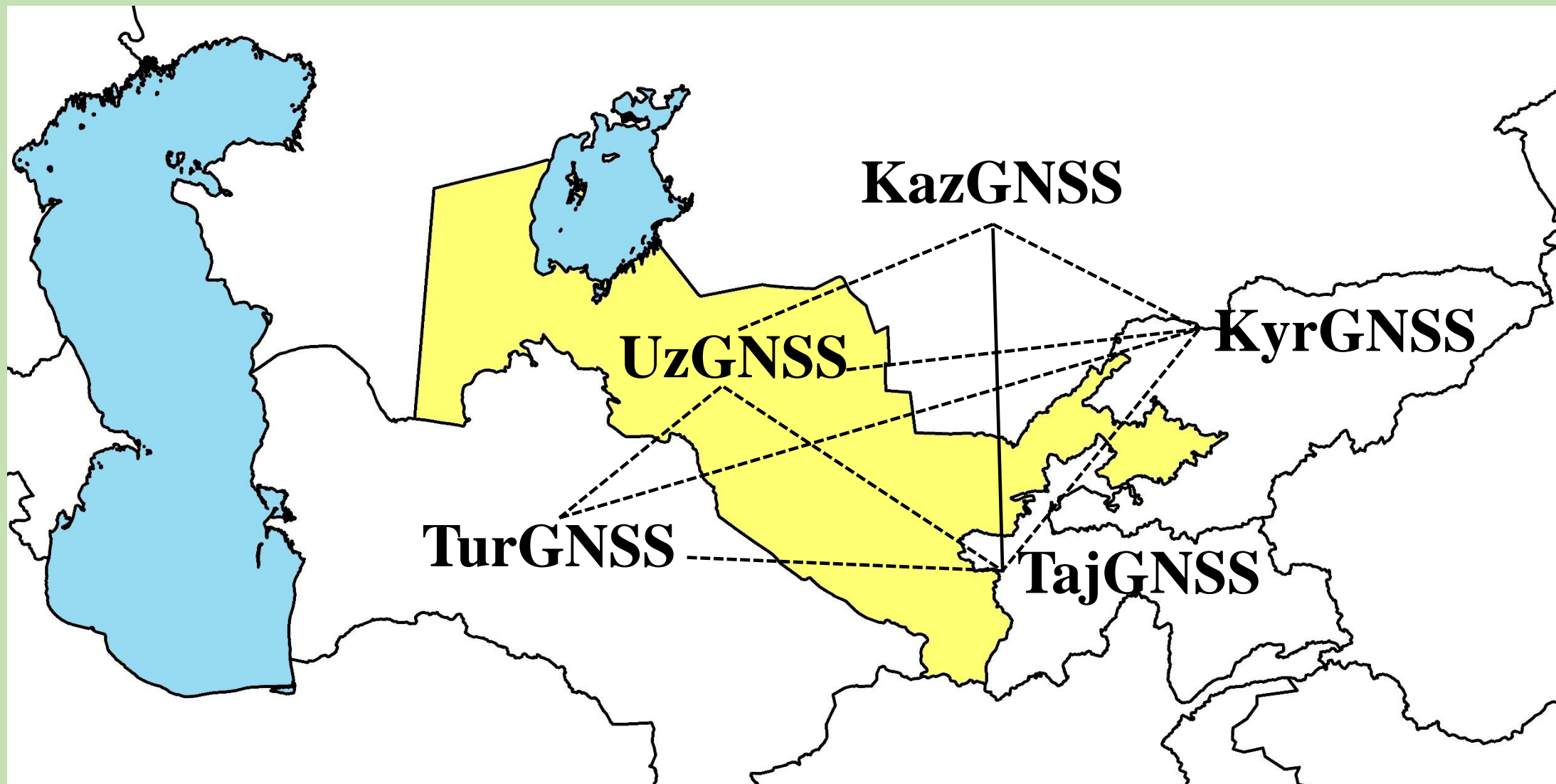
# For testing. GNSS measurements of Chinaz hydrology post



No	x	y	H
1	4531875.219	473175.344	247.078
2	4531874.960	473175.179	247.332
3	4531874.851	473175.009	247.436
4	4531874.740	473174.965	247.906
5	4531875.336	473175.128	248.491
6	4531875.582	473175.391	248.086
7	4531875.555	473175.421	247.977
8	4531875.463	473175.411	247.967
9	4531875.108	473175.428	248.126
10	4531874.993	473175.368	247.929
pen	4531887.386	473210.284	248.416



# IN THE FUTURE



## List of publication

- Mirmakhmudov E. Modification of the reference frame of Uzbekistan topographic maps based on GNSS. COORDINATES.V.XIII, № 04, April 2017.
- Mirmakhmudov et al. On the use of GIS PANORAMA for constructing a digital models of the relief of Uzbekistan some areas. Abstracts of the VI International scientific conference “Modern problems of the apply mathematics and information technology- Al-Khorezmiy 2018”. NUU, Tashkent, September.13-15 2018.pp.27-28.
- Mirmakhmudov E. Adenbaev B., Turgunov D. Some recommendations for monitoring the level of the Syrdarya and Amudarya rivers based on the GNSS. 4<sup>th</sup> United Nations/Pakistan/Prince Sultan Bin Abdulaziz International Prize for Water International Conference on the Use Space Technology for Water Management, 26 February-2 March 2018, Islamabad, Pakistan.
- Mirmakhmudov E. Abdumuminov B., Begimkulov O. Using GIS Panorama to build digital elevation models in National university of Uzbekistan. Journal of Geographical society of Uzbekistan . Special volume. Tashkent, 2018, pp.55-59.
- Mirmakhmudov E., Gulyamova L., Juliev M. Digital elevation models based on the topographic map. COORDINATES. Volume XV, Issue 1, 2019 The monthly magazine on positioning, navigation and beyond.
- Mirmakhmudov E., Nazirova D., Abdumuminov B. On the determination of the coordinates of hydrological stations based on GNSS in Uzbekistan. Scientific and technical magazine: Problems of architecture and construction. Special volume. Samarqand.2019.pp.78-81.

Thank you for your attention