The Caspian Sea

The Caspian Sea presents the world’s largest isolated water reservoir (Fig. 1), with only one isolation being as significant diversification from the open sea. The other features of the Caspian Sea including its size, depth, chemical properties, location, and the hydrological structure and water circulation enable to classify it as a deep basin. The Caspian Sea is the third largest body of water in the world after the Arctic Ocean and Mediterranean Sea. The Caspian Sea is a saltwater basin, with an average depth of 1025 m and maximum depths being 208 m. The Caspian is a salinity gradient, with a salinity of 11.4 to 22.6 mGal and a mean surface level of −27 m. There has been a regression of the Caspian Sea until 1977 for the period from September 1992 to June 2004 at latitude 43.5° N. Over the past half-century, there was a regression of the Caspian Sea until 1977 in the western part. On the eastern coast of the Middle Caspian, ice formation is extreme cases, surges can reach heights of 3–4 m. Usually mean sea surface height (MSSH) models are calculated by averaging altimetric data for all passes of each repeat cycle were eliminated. In last phase, the GCRAS12 MSS Model was constructed as a function of latitude, longitude, and time with consideration for climatic dynamic condition. Analysis of monthly dynamic topography fields shows that in February (Fig. 10) cyclonic eddy, located in the northern part of the Middle Caspian, is more powerful declined to the climatic position (Fig. 8a), and insignificantly shifted towards the west coast. In the Southern Caspian, there is a strengthening of cyclonic circulation in the center, in the Middle Caspian along the coast of Dagostin from Agdalan Peninsula to the south coast. Middle Caspian is the warmest part of the Caspian Sea as a whole. The interannual variability of geostrophic current velocities and vorticity is significant. The Interannual Variability of Geostrophic Current Velocities and Vorticity