Miage Glacier Lake is a glacial marginal lake that forms on the right snout of Miage Glacier, located in the Val Veny Valley (Aosta Valley – Italy). The lake has been experiencing seasonal drainages at least since the 1930's and 15 events have been documented from 1930 to 1990. The lake position has been almost unvaried since the first existing maps of late 1700, but lake morphology experienced major changes after the drainage event of September 2004, after which the water level could not reach again a sufficient height to fill the 3 depressions that used to form a bigger lake until 2003 (36,000 m$^2$). The lake having decreased its volume and surface, it did not seem by that time that GLOF from Miage Lake could cause any risk downstream (Deline et al. 2004), but recent observation of Sentinel 2B satellite images led to the individuation of unusual lake expansion towards its north shore. Thus, an UAV survey was performed to assess the actual lake area in July 2019, and the integration of satellite images and UAV surveys demonstrated a consistent lake area expansion since 2015. Moreover an emptying occurred in late August 2019 so that another UAV survey could be performed, and water volume estimation could be performed by means of DEM differencing. An important water volume was individuated, reaching 196,000 m$^3$ and an estimation of maximum subglacial GLOF debit has been performed. Global evolution trend of the glacier mass has been evaluated by analyzing different airborne Lidar surveys (1991-2008). A cumulated geodetic mass balance could be thus inferred and found good matching with remote sensed analysis (2003-2012) performed by means of stereo satellite imagery by Berthier et al. in 2014. Average surface lowering of the glacier surface could be analyzed and average values of -1.12 m/yr could be observed around lake Miage. The strong elevation loss of Miage Glacier lower snout is probably the cause of the lowering of the piezometric level in intra-glacial water limiting maximum altitude that water level can reach in the lake, so that the bigger basin of 2004 cannot be filled anymore. Moreover, an analysis of recent GLOFs of Miage Lake gave an insight about the possible dynamics of lake subglacial drainage, suggesting the existence of 2 different mechanisms of emptying as some events occur with lower water debits, earlier in the season, and other events occur later in the summer season with major water debits. Similar GLOF behavior has been described at Plaine Morte Glacier Lake in the Canton of Bern-Switzerland (Fahrni 2018). Field surveys of 2018 showed very likely evidence of hydrostatic uplift of the ice dam, so multi temporal UAV surveys and GNSS field surveys are planned for 2020 to possibly highlight evidences of
hydrostatic uplift of the glacier prior to GLOFs.