

EGU2020-2586

<https://doi.org/10.5194/egusphere-egu2020-2586>

EGU General Assembly 2020

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Dissolved organic matter in two thermal springs of East African rift valley

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Little is known about dissolved organic matter (DOM) in thermal springs. To fill this gap, this study describes the quantity, optical and molecular properties of dissolved organic matter (DOM) in two geothermal springs located in the East African rift valley a region extremely rich in geothermal phenomena such as hot springs, fumaroles, geysers and spouting springs and solfataras. The two sampled hot springs are located at the south of Elementatia soda-saline lake and at the Ol Njorowa gorge. Results evidenced the abundance of reduced, saturated, little aromatic compounds that might reflect DOM altered by high temperature and pressure. Beside that, the two hot springs showed very clear distinctive signatures. At Ol Njorowa the most abundant molecules are oxygen poor and sulphur bearing like molecules which might reflect abiotic sulfurization from geo fluids rich in H₂S. In contrast Elementatia hot spring is characterized by abundant nitrogen bearing aliphatic and protein-like molecules probably mirroring perfusion of geo-fluids through organic rich sediments located below the Elementaita lake bottom.