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Ca Isotope Fractionation ($\delta^{44/40}$Ca) in Shells of the Bivalve *Mytilus edulis* as a Proxy for Temperature and Salinity

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The international and interdisciplinary project CASIOPEIA investigates the relationship between calcium (Ca) isotope fractionation ($\delta^{44/40}$Ca) and climate parameters during bio-mineralization and inorganic precipitation of calcium carbonate ($CaCO_3$). The Ca isotope fractionation in bivalve shells may provide a powerful proxy for the reconstruction of past seawater temperatures throughout Earth's history. However, before Ca isotopes can be considered to be a robust temperature proxy in bivalve shells other effects influencing the Ca isotope record have to be known. In this respect we have some indications that the effect of temperature on bivalve's shell formation rates may be influenced by salinity fluctuations. In order to test this hypothesis we run a culturing experiment to establish a reliable relationship between $\delta^{44/40}$Ca isotope ratios and temperature for different salinities. Here, we present preliminary results of our experiments performed with the blue mussel *Mytilus edulis.*