

V O R T R A G

im Rahmen des Seminars

" Ausgewählte Kapitel der Allgemeinen, Analytischen und Physikalischen Chemie "

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**Zeit:** Freitag, 10.03.2023 10:15-12:00 Uhr

**Ort:** HS Phys. Chemie

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**The host-symbiont complex of mesophotic Red Sea octocorals**

Octocorals are an important component of benthic communities worldwide and are especially important in tropical regions. Despite the high diversity of octocoral populations in many shallow and mesophotic coral ecosystems (MCEs; found between 30 m to 150 m), they have received less attention than reef building scleractinian corals. The current research incorporates genetic, ecological, and physiological methods to address the hypothesis that environmental changes such as depth and climate-change scenarios affect essential life history traits of zooxanthellate octocorals. Here, I address key questions that underlie this hypothesis and advance our knowledge of octocoral biology and ecology. My study focuses on the diversity of Symbiodanecae in the Gulf of Aqaba MCE octocorals including their community structure across depth. The results show that host species identity plays a more significant role in determining symbiont composition than the depth factor. I also examined the effects of two potential end-of-the-century seawater conditions on the reproductive phenology of the octocoral *Rhytisma fulvum*. The results reveal, for the first time, that a combination of increased temperature and reduced pH conditions altered the timing of onset of breeding events and significantly affected the survival and metamorphosis rates of new recruits. Finally, I examined the influence of depth on the reproduction of *R. fulvum* by performing five-year in-situ observations of its reproductive activity, together with continuous recording of temperature, from shallow to mesophotic depths (0-45 m). The results revealed that an increase in temperature over 1–2-day intervals correlated with the onset of reproductive activity, leading to different reproductive periodicities in different depths. I also found a significant decrease in reproductive activity for the MCE colonies. The findings raise questions whether depth can provide a long-term and viable refuge for corals in an era of global environmental changes.



Glück auf!