

# Mantle Generation of Heavy Hydrocarbons

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*We are interested in the feasibility of abiogenic hydrocarbon-synthesis reactions operating at mantle pressures. Although we have not observed run products heavier than methane, we have documented very strong reactions at pressures corresponding to depths of hundreds of kilometers in Earth. We are currently attempting to optimize the methane forming reaction to see if heavier hydrocarbons may form as well.*

- **In situ** observations using Diamond Anvil Cells
- **Pressure** = 9.7 GPa (~300 km depth in Earth)
- **Temperature** = ~2200 K (laser heating)
- **VERY** strong reaction: methanogenesis from carbonate reduction
- **Deep Earth hydrocarbon reservoirs?**

