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Advanced control of produced water treatment processes using the online OiW measurement

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We strive to reduce the amount of oil discharged to the marine environment from offshore Oil & Gas water treatment facilities, without impacting the oil production. This will be accomplished through advanced control methods and the use of online Oil-in-Water monitors (OiW). We have already demonstrated that advanced controllers can stabilize the discharge concentration and the aim is to reduce the discharge concentration and the total discharge by using OiW monitor technology. Control-oritented grey-box models will be developed for the coupled three-phase separator and hydrocyclones, and sensor fusion techniques will be used to overcome the shortcomings of the current OiW technology.

The performance and potential pros and cons of different control methods and strategies will be tested both in simulation and on a lab-sized pilot-plant.