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A compact Self-Contained Underwater Velocimetry Apparatus (SCUVA) for in situ field measurements in daytime MATTHIAS KINZEL, JOHN DABIRI, Caltech — In-field measurements at remote location present a challenge for the measurement systems involved. Not only do these systems have to be self-sufficient in regard to power supply and data acquisition but also robust and easy to handle. With the current level of miniaturization in electronics it becomes possible to construct PIV-systems, which meet these criteria and are even small enough to be used as hand held devices. Following the work of Katija and Dabiri[1] we present a PIV- system, which is designed for SCUBA divers to take in-field measurements of the flow around marine organisms in daytime. The fact that the system can be operated in daytime makes work for the divers considerably easier. On the other hand it presents an additional challenge due to the laser power, which can be installed in portable devices. A detailed description of the measurement setup will be given together with a discussion of some preliminary results.

[1]K. Katija and J.O. Dabiri, "In situ field measurements of aquatic animal-fluid interactions using a Self-Contained Underwater Velocimetry Apparatus (SCUVA)"; Limnol. Oceanogr.: Methods 6, 162-171 (2008)

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