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| **Summer Placement Project Proposal** |
| Supervisor(s): Prof Dr Armin Reichold  Nominees in case of absence: Dr Laura Corner  Duration of Placement: from 2 to 3 months are reasonable  Date restrictions: preferably inside 4th July to 23rd September |
| **Section 1: Project description:**  Project title: Combining real time differential and absolute distance interferometry  Include project aims here  We wish to combine two distance measurement techniques in the same optical setup. One of the methods will be FSI as described in #1 which can measure distances for short times (shots) at high frequency but not continuously and not with low latency. We therefore wish to combine this method with more conventional methods of differential interferometry that can be used in fast (order of kHz) feedback loops for position control.  For this purpose we seek to set up a new interferometer head on an optical table that can combine the two methods and use them simultaneously or sequentially with low dead time. The project will entail the design and setup of the head and the analysis of the data from verification experiments. We hope to achieve a real time measurement of a moving target with low latency and high repetition rate. |
| **Section 2: Special requirements (skills and experience required):**  Required skills: Very good command of spoken and written English, must be able to work with laser and as such has to have vision on both eyes (we can provide safety training) ,knowledge of optics and interferometry principles, practical skills in a laboratory, preferably with optics setups, ability to extend existing computer based analysis algorithms using Java.  Desired skills: familiarity with some data analysis package, basic ideas of electronics, interest in optics simulation |