14 Seminar 6-3-2014

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Title: *Inertial Measurent Units and their Application to Mobile Robot Localization*

Abstract:
In this talk we will first review which data provides an Inertial Measurement Unit (IMU), and how it is processed to be used in localization problems, focusing on aspects such as gravity cancellation and bias effects. Afterwards, we will present the work carried out in the context of the PipeGuard FP7 European project. In this later case IMU and encoder measurements were used to localize a sewer pipe inspection vehicle, following an iterative minimization over a sliding window of platform states. Experimental results will be shown, pointing out the strongest points of IMU devices, but analysing why they can't be alone in a localization application.