Abstract submission deadline: 12.02.2016

Submission to: roger.filliger@bfh.ch and cc to diego.jannuzzo@bfh.ch

Send us together with a title at most 4 sentences explaining the:

1) what

and the

2) so what

Optionally, you may explain the **how**

Do not explain **why!**

An arbitrary (but nice) example

JOURNAL OF MATERIALS SCIENCE 19 (1984) 761–767

Characterization of microstructural anisotropy in orthotropic materials using a second rank tensor

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A second rank symmetric tensor which describes the degree of orientation in orthotropic materials is presented and shown to reflect accurately patterns of experimental data. The use of this tensor to describe microstructural anisotropy is compared to currently accepted methods and is found to be more useful and accurate in experimental studies. A method for determining the anisotropy tensor in a material is given, based on measurements on any three mutually perpendicular planes, and the fundamental restriction of this method to orthotropic materials is discussed. Experimentally determined anisotropy tensors in five specimens of cancellous bone from five different human bones are given.

what

so what

how

what

Does not explain **why!**

A nice example from a MSE-Student

Autarkic and inertial measurements based low-cost reconstruction of motorcycle forward speed

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Abstract—**Based on inertial data delivered from an autarkic low-cost, 6-axes MEMS inertial measurement unit (IMU) and voltage ripple signals taken from the motorcycles battery, we reconstruct forward velocity of a motorcycle respecting 5% error bars in a wide velocity range. The off-line reconstruction is based on a strap-down navigation algorithm in cascade with a *non GPS-based* navigation aid. The latter instead uses the residual periodic voltage fluctuations of the motorcycle's generator as a drift-stabilizing external measurement. Despite the structural simplicity of the algorithm and the relatively low performance of the IMU, the proposed off-line estimator delivers accurate autarkic speed estimates for a large class of motorcycles.**

What

How

So what

Does not explain **why!**

International Journal of Control, Automation, and Systems, vol. 4, no. 2, pp. 247-254, April 2006

Lever Arm Compensation for GPS/INS/Odometer Integrated System

Jaewon Seo, Hyung Keun Lee, Jang Gyu Lee, and Chan Gook Park*

Abstract: For more accurate navigation, lever arm compensation is considered. The compensation method for GPS and an odometer is introduced and new compensation methods are proposed for an odometer to consider the effect of coordinate transformation errors and the scale factor error. The methods are applied to a GPS/INS/odometer integrated system and the simulation and experimental results show its effectiveness.

An nice example where
what and **so what**
are intertwined

Abstract

Why (<-not needed here, ok for management summary)

In Hybrid Electricle Vehicles (HEV), performing online energy management is an important task to be achieved to reduce emissions, fuel consumption and increase vehicle performance. For this task, estimating the State of Charge (SOC) is needed since it serves as a measure of energy that is left inside an electrochemical battery. A variety of methods to solve this estimation problem have been proposed in the literature. However, most of these methods either assume equivalent circuit models for the battery and thus lose their validity under some discharge conditions or depend heavily on the choice of parameters in the algorithm. In this paper, we use behavioral framework to avoid postulation of a specific model for a battery and develop a new and simple SOC estimation algorithm. Once the problem is formulated as the computation of a specific free response of the battery, algorithm computes this response using only terminal current and terminal voltage measurements. We demonstrate the effectiveness of the algorithm with different discharge profiles using both simulated and real data.

what

how

so what