

# ACE-X2017

11<sup>th</sup> International Conference on Advanced Computational Engineering and Experimenting  
Vienna (Austria) from 3-6 July, 2017

## Yann MARCO

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### Background

French, 41, married, 2 kids  
Associate Professor (Highest class)  
Hab. to supervise research



### Figures

Supervisor of 10 PhD thesis  
Over 150 articles and communications  
H index = 17  
Over 1000 k€ contracts since 2006

### Research activities



Head of the « Fatigue » group (25 persons)  
1999 Agregation in Mechanical Engineering  
2003 PhD thesis (ENS Cachan)  
2012 Habilitation to supervise research  
Expert for French National Agency for Research

### Teaching activities

Professor at ENSTA Bretagne  
(School for engineers)  
Head of Modelization and Automotive dep.  
Head of European Master for Automotive Eng.  
Invited lecturer at Prague University (CTU)

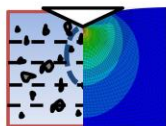


### Leader of many national research projects



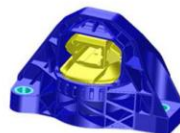
### Main topics investigated

#### Thermal and Marine Ageing of rubber



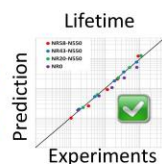
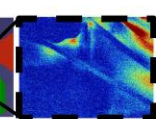
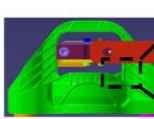
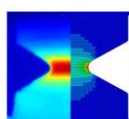
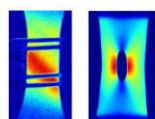
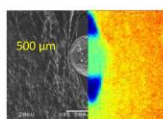
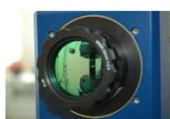
- Constitutive modeling
- Accelerated tests
- Constitutive gradients (instrumented  $\mu$ -hardness)

#### Water sorption in PA66 composites



- Constitutive modeling
- Approach and models
- Bridge to mech. properties

### Very fast evaluation (1 sample 1 day) from thermal measurements of the fatigue properties of rubber and composites



- Thermographic evaluation of the dissipation fields at **microstruture, sample and part scales**
- Evaluation of the defects population from SEM and X-ray tomography observations
- Energy-based criterion to predict the fatigue curves for samples, structures and parts