If you intend to submit a paper for the ASTIN COLLOQUIUM LISBOA 2016, you need to provide a Synopsis (using the template on the next page), complete this Submission Form and submit both to astincolloquium2016@gmail.com by Saturday 7 May 2016. Synopses and submission forms must be sent as MSWord attachments, please do not supply them in the body of an email. You will be advised of the outcome and, if accepted, your abstract will be uploaded to the website.

**SUBMISSION FORM**

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<th>Name:</th>
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**Title of Paper / Presentation / Session to appear in program:** Telematics insurance: impact on tarification

**Author/s:**
1. Roel Verbelen
2. Katrien Antonio
3. Gerda Claeskens

What will your final submission be? Presentation and Paper [ ]   Presentation Only [ ]

If selected, what level of knowledge will delegates attending your session require? (please select only) one
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ABSTRACT

Telematics insurance: impact on tarification

Roel Verbelen, Katrien Antonio and Gerda Claeskens

Key words: Generalized Linear Models, telematics data, tarification, car insurance

Purpose of your paper: statistical analysis of a telematics data set, comparison between traditional rating methodology and rating based on telematics information

Abstract:

Telematics technology - the integrated use of telecommunication and informatics – may fundamentally change the car insurance industry by allowing insurers to base their prices on the real driving behavior instead of on traditional policyholder characteristics and historical claims information. Telematics insurance or usage-based insurance (UBI) can drive down the cost for low-mileage clients and good drivers.

Car insurance is traditionally priced based on self-reported information from the policyholder, most importantly: age, license age, postal code, engine power, use of the vehicle, and claims history. Over time, insurers try to refine this a priori risk classification and restore fairness using no-claim discounts and claim penalties in the form of the bonus-malus system. It is expected that these traditional methods of risk assessment will become obsolete. Your car usage and your driving abilities can be better assessed based on telematics data collected, such as: the distance driven, the time of day, how long you have been driving, the location, the speed, harsh or smooth breaking, aggressive acceleration or deceleration, your cornering and parking skills... This high dimensional data, collected on the fly, will force pricing actuaries to change their current practice. New statistical models will have to be developed to adequately set premiums based on individual policyholder’s motoring habits instead of the risk associated to their peer group.

In this work, we take a first step in this direction. We analyze a telematics data set from a European insurer, collected in between 2010 and 2014, in which information is collected on the amount of meters insureds drive. Besides the number of meters driven, we also registered how this distance is divided over the different kind of road types and time slots. This data allows car insurers the use of real driving exposure to price the contract. We build claims frequency models combining traditional and telematics information and discover the relevance and impact of adding the new telematics insights.

Note: If you are not presenting a paper for this Colloquium, please include as much detail as possible in your Abstract (maximum three pages) to enable delegates to prepare for your session.