



31 May - 03 June 2016  
at  
ISEG- Lisbon School of Economics  
and Management

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](mailto: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

Name:	Glenn Meyers	Company:	Retired
T:		M:	
E:			
Title of Paper / Presentation / Session to appear in program:			
Dependencies in Stochastic Loss Reserve Models			
Author/s:			
1.	Glenn Meyers	2.	
3.		4.	

What will your final submission be? Presentation and Paper  Presentation Only   
selected, what level of knowledge will delegates attending your session require? (please select only one)  
 No prior knowledge  General industry knowledge assumed  Technical/specific industry knowledge assumed

**Note:** If you are asked to present at ASTIN COLLOQUIUM LISBOA 2016, it will still be necessary for you to register and pay to attend the Colloquium. IAP does not subsidise, discount, pay for, or extend special registration offers for presenters or delegates.



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## ABSTRACT

(TITLE OF PAPER / PRESENTATION TO APPEAR IN PROGRAM)

**Dependencies in Stochastic Loss Reserve Models**

*(Name of Author/s)*

*Glenn Meyers*

**Key words:** (Stochastic Loss Reserve Models, Bayesian MCMC, Correlations, Dependencies)

**Purpose of your paper:** (Show how to estimate the joint predictive distribution of loss reserve outcomes given two paid loss triangles.)

### Abstract:

Given a Bayesian Markov Chain Monte Carlo (MCMC) stochastic loss reserve model for two separate lines of insurance, this paper describes how to fit a bivariate stochastic model that captures the dependencies between the two lines of insurance. A Bayesian MCMC model similar to the Changing Settlement Rate (CSR) model, as described in Meyers (2015), is initially fit to each line of insurance. Then taking a sample from the posterior distribution of parameters from each line, this paper shows how to produce a sample that represents a bivariate distribution that maintains the original univariate distributions as its marginal distributions. This paper goes on to compare the predicted distribution of outcomes by this model with the actual outcomes, and a bivariate model predicted under the assumption that the lines are independent. It then applies two Bayesian model selection statistics to compare the fits of the two models.

**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.

Note - I submitted this paper to *Variance* in December. If my proposal is accepted, I will ask the editors of *Variance* to allow me to include this paper as part of the ASTIN Colloquium.

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