ITAM

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO

EL DEPARTAMENTO DE ACTUARÍA Y SEGUROS

Invita al **Seminario de Riesgo**:

Delayed capital injections:
From the Cramér–Lundberg to the
Markov Arrival risk model

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Abstract: In this presentation, we propose a generalisation to the Cramér–Lundberg risk model, by allowing for a delayed receipt of the required capital injections whenever the surplus of an insurance firm is negative. Delayed capital injections often appear in practice due to the time taken for administrative and processing purposes of the funds from a third party or the shareholders of an insurance firm. The delay time of the capital injection depends on a critical value of the deficit in the following way: if the deficit of the firm is less than the fixed critical value, then it can be covered by available funds and therefore the required capital injection is received instantaneously. On the other hand, if the deficit of the firm exceeds the fixed critical value, then the funds are provided by an alternative source and the required capital injection is received after some time delay. In this modified model, we derive a Fredholm integral equation of the second kind for the ultimate ruin probability and obtain an explicit expression in terms of ruin quantities for the classical risk model. In addition, we extend the capital injection delayed risk model, such that the delay of the capital injections depends explicitly on the amount of the deficit. In this generalised risk model, we derive another Fredholm integral equation for the ultimate ruin probability, which is solved in terms of a Neumann series. Finally, to move to more advanced non-homogeneous models, the same problem is studied in a case of a Markov Arrival risk Process.

Viernes 20 de Noviembre, 12:00
https://itam.zoom.us/j/98939739005

El Departamento Académico de Actuaría y Seguros agradece que hagan extensiva esta invitación a sus alumnos.