



1. DATOS BÁSICOS DEL TFG:

Título: Modelos multi-estados en el campo de la Fiabilidad

Descripción general (resumen y metodología):

Hoy día es de especial interés, en el análisis de tiempos de vida, el estudio de la evolución y el análisis del comportamiento de sistemas (fiabilidad) que atraviesan distintos estados a lo largo del tiempo. Los modelos multi-estados son modelos que estudian el problema mencionado anteriormente.

El campo de aplicación de los modelos multi-estados es muy amplio resaltando el de la fiabilidad. Se han considerado modelos multi-estados (MSS) en la modelización de sistemas que atraviesan distintas etapas en su funcionamiento, como son sistemas unitarios, redundantes, con degradación, mantenimiento preventivo,...

Son diversas las técnicas utilizadas en la modelización de sistemas multi-estados. Los procesos de Markov permiten el estudio y modelización de sistemas multi-estados de una forma algorítmica, bien estructurada, obteniendo medidas de interés implementables computacionalmente. Específicamente es de al to interés la incorporación de la distribuciones tipo fase, así como de los procesos de llegadas markovianas y sus extensiones.

Se realizará una revisión bibliográfica actualizada y se aplicarán los resultados obtenidos en el campo de la fiabilidad o supervivencia con Matlab y R.

Tipología: Estudio de casos, teóricos o prácticos, relacionados con la temática del Grado.

Objetivos planteados:

- § Conocer las medidas y los modelos clásicos en fiabilidad.
- § Modelizar el comportamiento de un tiempo de vida mediante un modelo multi-estados
- § Obtener medidas de interés desde un punto de vista teórico
- § Estimar el modelo desde el conjunto de datos o realizar simulaciones
- § Validar e interpretar los resultados
- § Empleo y estudio del correspondiente paquete de R-cran y Matlab

Bibliografía básica:

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Recomendaciones y orientaciones para el estudiante:

Plazas: 1

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