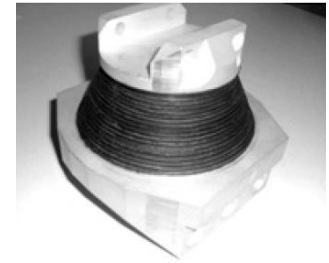


Literature review on fatigue of elastomeric helicopter rotor bearings

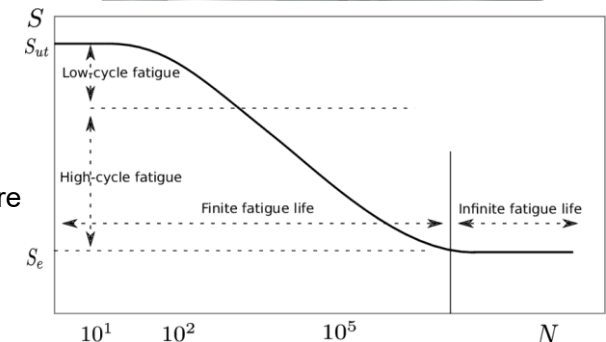
Project Outline

Elastomeric rotor bearings are key components in modern helicopter rotor systems. Their structural performance and service life are strongly influenced by the fatigue behavior of the laminated elastomer-metal architecture. The objective of this project is to perform a structured literature review on fatigue in elastomeric rotor bearings and related elastomer-metal laminates. Experimental investigations, material systems, failure mechanisms, fatigue criteria, and modelling approaches will be reviewed and consolidated. The collected information will be used to identify open research questions and provide recommendations for future rotor bearing fatigue investigations.



Work Packages

1. Literature review on elastomeric rotor bearings and bearing architectures
2. Review of fatigue mechanisms in reinforced laminated elastomers
3. Analysis of experimental fatigue testing methodologies and specimen concepts
4. Review of fatigue life prediction methods and numerical modelling approaches
5. Compilation of material properties, laminate geometries, and fatigue test data from literature
6. Identification of open research questions and recommendations for future investigations



Recommended Background

- Interest in rotorcraft engineering and rotor systems
- Interest in fatigue and durability of engineering structures
- Basic understanding of solid mechanics and material behaviour
- Independent and structured working style

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