Structural Reliability
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Lecture –83
History Definition and Scope (Part - 01)

Welcome to the second part of our NPTEL course on structured reliability. In the first part, we introduced the basics of probability theory random variables and distributions joint distributions and ended with an introduction to Monte Carlo simulations. We are now ready to introduce the fundamentals of the subject of reliability and some of the concepts that are particular to structural reliability.

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In this part in three weeks I would like to cover as you can see in the course plan a brief description of how the subject evolved during the second half of the 20th century and some of the milestones in structural reliability. In the first week I would also like to show how problems can be formulated in civil and structural engineering especially how failure needs to be defined. In the second week, we discuss how system reliability can be formulated in terms of components or elements.

And while doing that I will also point out how structural systems have some features that make them a bit different and sometimes a little challenging to solve and we will end this part in the third week with an introduction and a discussion on time to failure based approach to reliability.