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Info-gap Theory: Overview of Modelling, Inference, and Design

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Info-gap theory is a method for analysis, planning, decision and design under uncertainty. The future may differ from the past, so our models may err in ways we cannot know. Our data may lack evidence about surprises: catastrophes or windfalls. Our scientific and technical understanding may be incomplete. These are info-gaps: incomplete understanding of the system being managed. Info-gap theory provides decision-support tools for modelling and managing severe uncertainty. After discussing the difference between info-gap and aleatoric uncertainty, we explore applications to modelling, statistical inference, and technological design.