

# **Human Nature in Reliable Computing**

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Muhanna and Mullen (2004) have listed four sources of uncertainties in physical modeling:

1. Appropriateness of the mathematical model describing the physical system
2. Discretization of the mathematical model into a computational framework
3. Inexact knowledge of the input parameters
4. Errors introduced by the nature of computer finite arithmetic

The author shows that in an imperfect world mathematical models are sometime built with a desired outcome in mind. Human fallibility can lead to promoting and defending prediction models favorable to there interests. Two such cases are presented. One deals with predicting the corrosion resistance of the so-called weathering steels; the other concerns the resistance of steels to crack extension.