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| Nota di contenuto | Uncertainty in Industrial Practice; Contents; Preface; Contributors and Acknowledgements; Introduction; Notation - Acronyms and abbreviations; Part I Common Methodological Framework; 1 Introducing the common methodological framework; 1.1 Quantitative uncertainty assessment in industrial practice: a wide variety of contexts; 1.2 Key generic features, notation and concepts; 1.2.1 Pre-existing model, variables of interest and uncertain/fixed inputs; 1.2.2 Main goals of the uncertainty assessment; 1.2.3 Measures of uncertainty and quantities of interest; 1.2.4 Feedback process 1.2.5 Uncertainty modelling1.2.6 Propagation and sensitivity analysis processes; 1.3 The common conceptual framework; 1.4 Using probabilistic frameworks in uncertainty quantification - preliminary comments; 1.4.1 Standard probabilistic setting and interpretations; 1.4.2 More elaborate level-2 settings and interpretations; 1.5 |

Concluding remarks; References; 2 Positioning of the case studies; 2.1 Main study characteristics to be specified in line with the common framework; 2.2 Introducing the panel of case studies; 2.3 Case study abstracts; Part II Case Studies
3 CO2 emissions: estimating uncertainties in practice for power plants3.1 Introduction and study context; 3.2 The study model and methodology; 3.2.1 Three metrological options: common features in the pre-existing models; 3.2.2 Differentiating elements of the fuel consumption models; 3.3 Underlying framework of the uncertainty study; 3.3.1 Specification of the uncertainty study; 3.3.2 Description and modelling of the sources of uncertainty; 3.3.3 Uncertainty propagation and sensitivity analysis; 3.3.4 Feedback process; 3.4 Practical implementation and results; 3.5 Conclusions; References
4 Hydrocarbon exploration: decision-support through uncertainty treatment4.1 Introduction and study context; 4.2 The study model and methodology; 4.2.1 Basin and petroleum system modelling; 4.3 Underlying framework of the uncertainty study; 4.3.1 Specification of the uncertainty study; 4.3.2 Description and modelling of the sources of uncertainty; 4.3.3 Uncertainty propagation and sensitivity analysis; 4.3.4 Feedback process; 4.4 Practical implementation and results; 4.4.1 Uncertainty analysis; 4.4.2 Sensitivity analysis; 4.5 Conclusions; References
5 Determination of the risk due to personal electronic devices (PEDs) carried out on radio-navigation systems aboard aircraft5.1 Introduction and study context; 5.2 The study model and methodology; 5.2.1 Electromagnetic compatibility modelling and analysis; 5.2.2 Setting the EMC problem; 5.2.3 A model-based approach; 5.2.4 Regulatory and industrial stakes; 5.3 Underlying framework of the uncertainty study; 5.3.1 Specification of the uncertainty study; 5.3.2 Description and modelling of the sources of uncertainty; 5.3.3 Uncertainty propagation and sensitivity analysis; 5.3.4 Feedback process
5.4 Practical implementation and results

Sommario/riassunto

Managing uncertainties in industrial systems is a daily challenge to ensure improved design, robust operation, accountable performance and responsive risk control. Authored by a leading European network of experts representing a cross section of industries, Uncertainty in Industrial Practice aims to provide a reference for the dissemination of uncertainty treatment in any type of industry. It is concerned with the quantification of uncertainties in the presence of data, model(s) and knowledge about the system, and offers a technical contribution to decision-making processes whilst acknowledgin