Some past decision theory models for euro construction model codes and for road drainage in Spain, and modest hints with multi-criteria methods for agro and environmental assurance

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The authors are from UPM and are relatively grouped, and all have intervened in different academic or real cases on the subject, at different times as being of different age. With precedent from E. Torroja and A. Páez in Madrid Spain Safety Probabilistic models for concrete about 1957, now in ICOSSAR conferences, author J.M. Antón involved since autumn 1967 for euro-steel construction in CECM produced a math model for independent load superposition reductions, and using it a load coefficient pattern for codes in Rome Feb. 1969, practically adopted for European constructions, giving in JCSS Lisbon Feb. 1974 suggestion of union for concrete-steel-al.. That model uses model for loads like Gumbel type I, for 50 years for one type of load, reduced to 1 year to be added to other independent loads, the sum set in Gumbel theories to 50 years return period, there are parallel models. A complete reliability system was produced, including non linear effects as from buckling, phenomena considered somehow in actual Construction Eurocodes produced from Model Codes. The system was considered by author in CEB in presence of Hydraulic effects from rivers, floods, sea, in reference with actual practice. When redacting a Road Drainage Norm in MOPU Spain an optimization model was realized by authors giving a way to determine the figure of Return Period, 10 to 50 years, for the cases of hydraulic flows to be considered in road drainage. Satisfactory examples were a stream in SE of Spain with Gumbel Type I model and a paper of Ven Te Chow with Mississippi in Keokuk using Gumbel type II, and the model can be modernized with more varied extreme laws. In fact in the MOPU drainage norm the redacting commission acted also as expert to set a table of return periods for elements of road drainage, in fact as a multi-criteria complex decision system. These precedent ideas were used e.g. in wide Codes, indicated in symposia or meetings, but not published in journals in English, and a condensate of contributions of authors is presented. The authors are somehow involved in optimization for hydraulic and agro planning, and give modest hints of intended applications in presence of agro and environment planning as a selection of the criteria and utility functions involved in bayesian, multi-criteria or mixed decision systems. Modest consideration is made of changing in climate, and on the production and commercial systems, and on others as social and financial.

References may be diverse, also general about OR, Decision Theory, Assurance, Environment, Agro.
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