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**INTERVAL PARAMETER MODELLING TO
GENERATE ALTERNATIVES:
AN APPLICATION TO CLIMATE CHANGE
IMPACT ASSESSMENT**

G. H. Huang, Y. Y. Yin, S. J. Cohen and B. Bass

ENVIRONMENTAL ADAPTATION RESEARCH GROUP BULLETIN 94-03

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INTERVAL PARAMETER MODELLING TO GENERATE ALTERNATIVES: AN APPLICATION TO CLIMATE-CHANGE IMPACT STUDY

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Abstract

An interval parameter Hop, Skip, and Jump (IPHSJ) approach and the related computer software are proposed and applied to the area of climate impact assessment and adaptation study. The method improves upon existing modelling to generate alternatives (MGA) approaches by allowing uncertain information to be effectively communicated into the optimization process and resulting solutions. Feasible decision alternatives can be generated through interpretation of the IPHSJ solutions according to projected applicable system conditions, which are flexible in reflecting potential system condition variations caused by the existence of input uncertainties. The IPHSJ method is demonstrated in a hypothetical scenario of changing agricultural/timbering capability due to climate change in the Mackenzie Basin, Canada.

Key words: climate change, interval parameter, Hop, Skip, and Jump approach, modelling to generate alternatives, uncertainty, decision making.