



M5P modelling of non-linear processes and hydrometeorological thresholds

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M5P is a relative newcomer to the field of hydrological modelling. It is a 'rational reconstruction' of M5 (Quinlan, 1992) that uses 'divide and conquer' methods and recursive splitting to develop a 'tree structure'; delivering reduced levels of statistical variance in sub-sets of a target variable, such that simple linear approximations can thereafter be fitted to good effect. Two rainfall-runoff modelling comparisons exist: each compares and contrasts M5P with BPNN (Solomatine & Dulal, 2003; Solomatine & Xue, 2004). Five other related hydrological studies are published in two different languages: Slovenian (Kompore et al., 1997; Ltravs et al., 2004) and English (Bhattacharya & Solomatine, 2005; Bhattacharya et al., 2007; Ltravs & Brilly, 2007). The two earlier modelling comparisons were nevertheless performed under different hydrological conditions and involved different temporal intervals. Further testing on a wide range of more complex hydrometeorological datasets is required for scientists to develop a clearer understanding of potential similarities and differences in results. This paper reports the results of pertinent modelling experiments applied to two different catchments in Iceland.