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A coupled dual source GCM SVAT

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Abstract. The single source SVAT scheme (MOSES) used in the UK Meteorological Office GCM is modified to include two sources. The performances of the original and the new scheme are compared with minimal calibration against data from sparse vegetation taken from the HAPEX-Sahel experiment. Both schemes perform well; in particular the dual source SVAT successfully simulates the different temperatures of the sparse vegetation and soil. It is demonstrated that the two sources need to be coupled, rather than acting independently, for an accurate result. Some components of the single and dual source schemes are driven offline by measured surface temperature. In this case a dual source SVAT scheme performs significantly better than a single source scheme.

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