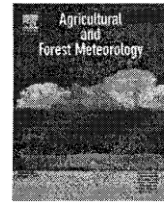


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## Modelling interception loss from evergreen oak Mediterranean savannas: Application of a tree-based modelling approach

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### ABSTRACT

In a previous study, it was shown that an isolated, fully saturated tree-crown behaves like a wet bulb, allowing evaporation of intercepted rainfall to be estimated by a simple diffusion equation for water vapour. This observation was taken as the basis for a new approach in modelling interception loss from savanna-type woodland, whereby the ecosystem evaporation is derived by scaling up the evaporation from individual trees, rather than by considering a homogeneous forest cover. Interception loss from isolated trees was estimated by combining the aforementioned equation for water vapour flux with Gash's analytical model. A new methodology, which avoids the subjectivity inherent in the Leyton method, was used for estimating the crown storage capacity. Modelling performance was evaluated against data from two Mediterranean savanna-type oak woodlands (*montados*) in southern Portugal. Interception loss estimates were in good agreement with observations in both sites. The proposed modelling approach is physically based, requires only a limited amount of data and should be suitable for the modelling of interception loss in isolated trees and savanna-type ecosystems.

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