An infiltration scheme using Horton equation

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Flood forecasting underwent a constant evolution becoming more and more demanding about the models used for hydrologic simulations. Nowadays, the importance of using continuous distributed modeling emerges. A proper schematization of the infiltration process is central to these types of models. Many popular infiltration schemes, robust and easy to implement, are too simplistic for the development of a continuous hydrologic model. The availability of soil information often limits the implementation of proper infiltration schemes. In this work a combination between the Soil Conservation Service Curve Number method and a method derived from Horton equation is proposed in order to overcome the intrinsic limits of the two schemes. The SCS-CN method though be easy applicable on large areas, has structural limitations. The objective of this work is to overcome these limits by a different schematization of the processes, maintaining the large applicability and the robustness of the SCS-CN method. The estimation of the parameters of the modified Horton method is carried out using soil type and use information of the Curve Number. Some applications at catchment scale within a distributed model are proposed.