A NEW CELLULAR AUTOMATA-BASED MODEL TO FORECAST RAINFALL FIELDS.  
STUDY CASE OF BOGOTA-CITY (COLOMBIA)  

Nelson Obregón¹ & Ana C. Santos²  
¹Geophysical Institute. Javeriana University. Bogotá, Colombia  
²“Nueva Granada” Military University. Bogotá, Colombia  

ABSTRACT  

A new cellular automata-based model to forecast rainfall fields is presented. The model is 
implemented and validated with rainfall data gathered at Bogota-City (Colombia). In order to 
obtain proper transition rules, this approach employs tools of data mining such as decision 
trees entropy-based models. It also uses high temporal resolution (consecutive) rainfall fields 
to build a geodatabase to obtain pattern tables aimed at encapsulating rainfall dynamics. 
Results show not only a new methodology to employ CA in a rainfall model, but also 
promising approach to envision new nowcasting meteorological models.