# Optimal placement of weather radar network in complex terrain using swarm intelligence

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This work proposes an accelerated particle swarm optimization (APSO) approach for the optimal placement problem of small low cost x-band mountain weather radars. Given a finite set of weather radars, a network is produced such that the geographical coverage area is maximised. By taking in consideration terrain blockage and low level radar beam elevation restrictions, the proposed method is capable of analysing multiple radar networks architectures in a restricted complex orography region and producing optimal result. The numerical results show a noticeable increase on the percentage of area covered. The proposed method can serve as an analysis tool for a decision support system to assist meteorologist in the selection of prime sites for the installation of weather radars.