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Flash floods warning technique based on wireless communication networks data

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Flash floods can occur throughout or subsequent to rainfall events, particularly in cases where the precipitation is of high-intensity. Unfortunately, each year these floods cause severe property damage and heavy casualties. At present, there are no sufficient real time flash flood warning facilities found to cope with this phenomenon. Here we show the tremendous potential of flash floods advanced warning based on precipitation measurements of commercial microwave links. As was recently shown, wireless communication networks supply high resolution precipitation measurements at ground level while often being situated in flood prone areas, covering large parts of these hazardous regions. We present the flash flood warning potential of the wireless communication system for two different cases when floods occurred at the Judean desert and at the northern Negev in Israel. In both cases, an advanced warning regarding the hazard could have been announced based on this system.

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