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# Analysis of heavy rainfall events in North Rhine–Westphalia with radar and raingauge data

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## Abstract

Five heavy rainfall events were investigated with radar and raingauge data. Special attention was paid to quality check and adjustment of radar data. Attenuation effects could be observed on both, C-Band and on X-Band radar. Adjustment of radar data to raingauge values turned out to be difficult in the vicinity of heavy local rain cells. Four adjustment methods were analysed and radar data from different radar stations were compared. As a further result of this project, the spatial extent of the precipitation fields was identified by adjusted radar data and compared to raingauge data. For each rainfall event, radar derived accumulated rainfall images and catchment time series were produced. © 2005 Elsevier B.V. All rights reserved.

*Keywords:* Radar; Rainfall; Raingauge; Damage; Quality control; Adjustment; Attenuation

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## 1. Introduction

In the summers of 2001 and 2002 heavy, rainfall events caused large damages in five locations of North Rhine–Westphalia (Fig. 1). These events were very localised and caused severe damage such as landslides and flooding.

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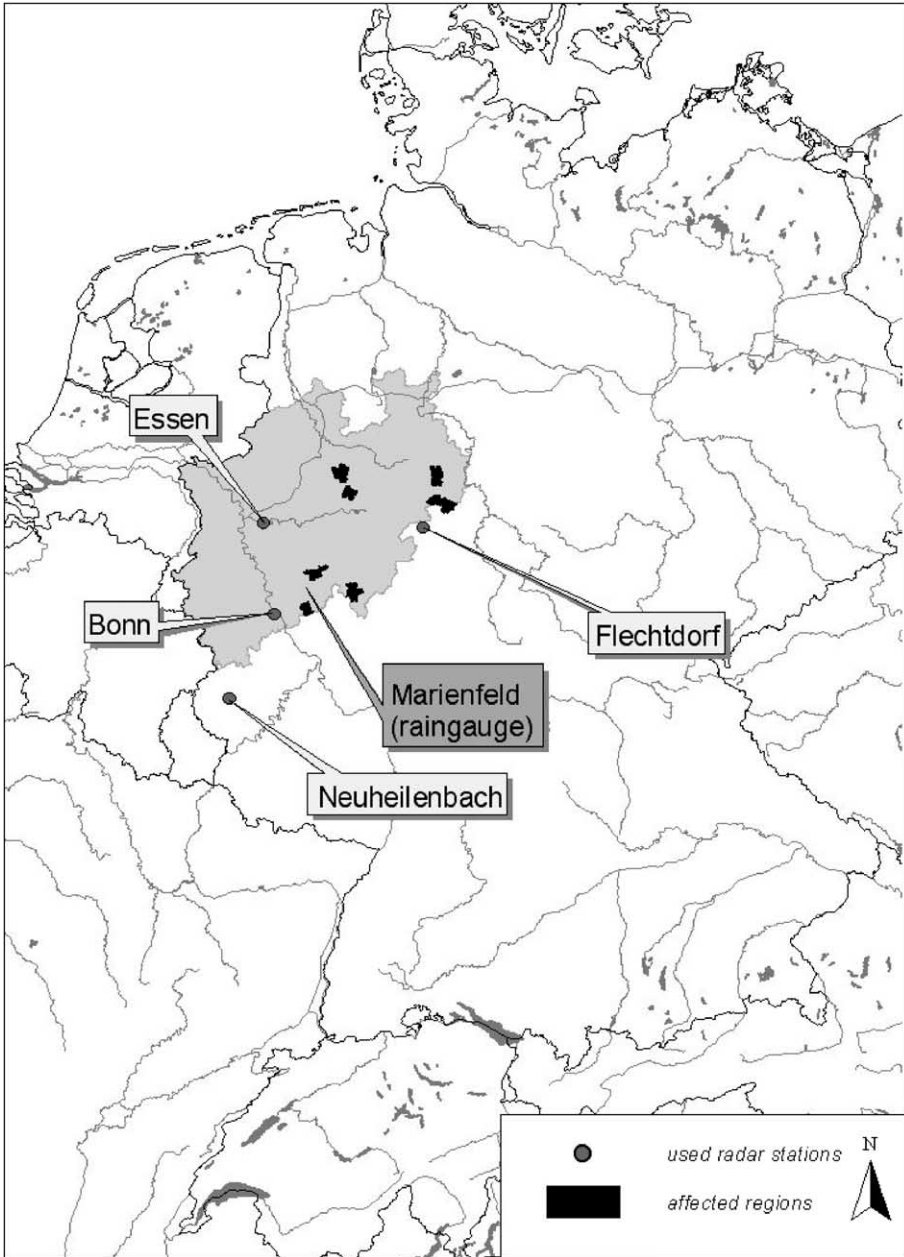


Fig. 1. Affected locations and used radar stations.

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