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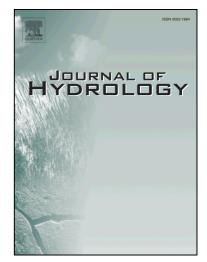
### Research papers

Uncertainty, sensitivity and improvements in soil moisture estimation with cosmic-ray neutron sensing

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# **ACCEPTED MANUSCRIPT**

## 1 Uncertainty, sensitivity and improvements in soil moisture estimation with cosmic-ray

#### 2 neutron sensing

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## 16 Abstract

17 Cosmic-ray neutron sensing (CRNS) is a promising proximal soil sensing technique to estimate 18 soil moisture at intermediate scale and high temporal resolution. However, the signal shows 19 complex and non-unique response to all hydrogen pools near the land surface, providing some 20 challenges for soil moisture estimation in practical applications. Aims of the study were 1) to 21 assess the uncertainty of CRNS as a stand-alone approach to estimate volumetric soil moisture in 22 cropped field 2) to identify the causes of this uncertainty 3) and possible improvements. Two 23 experimental sites in Germany were equipped with a CRNS probe and point-scale soil moisture Download English Version:

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