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The question of the AltiKa/Ice-1 bias over rivers

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The SARAL satellite embarks AltiKa, a Ka band altimeter. SARAL is flying the same orbit as ERS-2 and ENVISAT did previously. The altimetric pulses of AltiKa are also routinely processed in the GDR with the ICE-1 algorithm, the one performing best over rivers for ENVISAT. Thus, it can be expected that the ERS-2 and ENVISAT time series of the river levels can be continued with the SARAL series, same as between the ERS-2 and ENVISAT series. However, the gap between the decommissioning of ENVISAT and the launch of SARAL prevents the estimate of the bias between the series on a case by case basis by simple comparison of the water levels at similar dates. Therefore, a mean value of the AltiKa bias has to be estimated and be applied globally. In the present study, we present and discuss the different estimates of such a bias (ICE-1 algorithm) that we obtained by comparing AltiKa series of river levels to GPS-levelled gauges and/or to Jason-2 series used to bridge the ENVISAT and SARAL series at cross-overs between the two ground tracks. The series used in this study were computed in the Congo and Amazon basins.