Unambiguous measurement of the orientation of the linearly polarized component of Jovian decametric radio emission is a long lasting question, still not solved. Indeed, the uncertainty on the (Faraday) rotation measure through the terrestrial ionosphere is of the same order of magnitude as the position angle to be measured. Simultaneous observations of Jupiter from distant ground based radio telescopes, as those which are scheduled in 2015-2016 by using LWA1 (USA), URAN2 (Ukraine) and Nançay Decameter Array (France), may solve this ambiguity, since the local ionosphere effects can, in principle, be disentangled from common Jovian radiation properties. The measurement method, some first results and their theoretical implications are discussed in this talk.