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The advent of ubiquitous systems places even more focus on users, since these systems must support their daily activities in such a transparent way that does not disturb them. Thus, much more attention should be provided to human---computer interaction (HCI) and, as a consequence, to its quality. Dealing with quality issues implies first the identification of the quality characteristics that should be achieved and, then, which software measures should be used to evaluate them in a target system. Therefore, this work aims to identify what quality characteristics and measures have been used for the HCI evaluation of ubiquitous systems. In order to achieve our goal, we performed a large literature review, using a systematic mapping study, and we present our results in this paper. We identified 41 pertinent

in this paper. We identified 41 pertinent papers that were deeply analyzed to extract quality characteristics and software measures. We found 186 quality characteristics, but since there were divergences on their definitions and duplicated characteristics, an analysis of synonyms by peer review based on the equivalence of definitions was also done. This analysis allowed us to define a final suitable set composed of 27 quality characteristics, where 21 are generic to any system but are particularized for ubiquitous applications and 6 are specific for this domain. We also found 218 citations of measures associated with the characteristics, although the majority of them are simple definitions with no detail about their measurement functions. Our results provide not only an overview of this area to guide researchers in directing their efforts but also it can help practitioners in evaluating ubiquitous systems using these