

Admissible Representations of Probability Measures

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In a recent paper, probabilistic processes are used to generate Borel probability measures on topological spaces X that are equipped with a representation in the sense of Type-2 Theory of Effectivity. This gives rise to a natural representation of the set $\mathcal{M}(X)$ of Borel probability measures on X . We compare this representation to a canonically constructed representation which encodes a Borel probability measure as a lower semicontinuous function from the open sets to the unit interval. This canonical representation turns out to be admissible with respect to the weak topology on $\mathcal{M}(X)$. Moreover, we prove that for countably based topological spaces X the representation via probabilistic processes is equivalent to the canonical representation and thus admissible with respect to the weak topology on $\mathcal{M}(X)$.