

## **On the recurrent extensions of real self similar Markov processes**

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In this work, necessary and sufficient conditions are obtained for the existence of recurrent extensions of real self-similar Markov processes. We solve an old problem originally posed by Lamperti for positive self-similar Markov processes. Our main result ensures that a real self-similar Markov process with a finite hitting time of the point zero has a recurrent extension that leaves 0 continuously if and only if the Markov Additive Process associated, via Lamperti transformation, satisfies the Cramér's condition. This is a joint work with Juan Carlos Pardo and Víctor Rivero.