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Chatter reduction in sliding mode tuner controller using skipping surface

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TRIUMF ISAC 1 tuning controllers operate using minimum seeking sliding mode controller to minimize the reflected power in their cavities. As with all minimum seeking algorithms, chatter present in the controller can degrade its performance and cause necessary mechanical wear. By observing the rate at which the minimizing function approaches the sliding surface, it is possible to determine whether a change in direction is necessary, thereby reducing the amount of chatter throughout the minimum seeking process.

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