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Follow-up a signal deepened into noise: the challenge of blind continuous gravitational wave searches

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The impressive computational cost required to probe a vast parameter space forces blind searches for Continuous Gravitational Waves (CW) to undertake a semi-coherent approach. On top of that, the sensitivity to CW depends on the coherent segment's length and obviously on the total observation time. Hence, searches have to be supported by follow-up pipelines where this baseline is gradually increased. Since follow-ups have to deal with $O(10^{5-6})$ outliers, their tuning is of crucial importance towards the first detection. In fact, just by accepting more candidates, searches can achieve better sensitivities at the price of higher false alarm probabilities.

Starting from a brief introduction to blind searches, this talk will focus on follow-up pipelines. Lastly, implications on sensitivities will be discussed.

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