



US 20230231588A1

(19) **United States**(12) **Patent Application Publication**
ZENG et al.(10) **Pub. No.: US 2023/0231588 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **MULTIPATH SUPPRESSION METHOD
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(57)

ABSTRACT

A multipath suppression method based on a steepest descent method includes stripping, according to carrier Doppler shift information fed back by a phase-locked loop, a carrier from an intermediate-frequency signal input into a tracking loop; constructing, on the basis of the autocorrelation characteristics of a ranging code, a quadratic cost function related to a measurement deviation of the ranging code, the cost function being not affected by a multipath signal; and finally, designing a new tracking loop of the ranging code according to the quadratic cost function and the principle of the steepest descent method, such that the loop has a multipath suppression function without increasing the computational burden. Compared with a narrow-distance correlation method, the current method reduces computing resources by $\frac{1}{3}$, the design and adjustment of parameters are simple and feasible, a multipath suppression effect is superior, and a high engineering application value is obtained.

(21) Appl. No.: **18/041,711**(22) PCT Filed: **Jul. 9, 2021**(86) PCT No.: **PCT/CN2021/105414**

§ 371 (c)(1),

(2) Date: **Feb. 15, 2023**(30) **Foreign Application Priority Data**

Aug. 18, 2020 (CN) 202010830476.3

