BEIDOU MULTI-SOURCE FUSION POSITIONING METHOD IN DISASTER ENVIRONMENT

Abstract

Provided is a Beidou multi-source fusion positioning method in a disaster environment, including the following steps: step 1: acquiring images using a camera on a carrier to be positioned in the disaster environment, and constructing a VIO factor based on point and line feature extraction; step 2: constructing a map and performing refined correction on the map under a GNSS/IMU constraint to obtain a global map; and step 3: expanding visual factors using the global map, and performing global pose optimization for a GNSS/INS/vision integrated navigation system to complete Beidou multi-source fusion positioning in the disaster environment; and the method achieves real-time performance and refinement of disaster scene map construction, and through global map prediction generated in real time, appropriate visual points are selected for expansion, and factors in a factor graph are added and removed to adapt to dynamic environmental changes under natural disasters, thereby improving robustness and accuracy of a rescue-vehicle localization system.

Fig. 1