Comments on :

"Low-drift and real-time lidar odometry and mapping"

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May 15, 2017

Abstract

This paper explain how LOAM algorithm is working, and present some results. This method, coupled with IMU, try to achieve both low drift in motion estimation and low computational complexity.

I. Introduction

The problem addressed here is to achieve SLAM without accurate pose estimation (as GPS). They don't consider Loop Closure, as they consider it unnecessary for mapping floor of a building. They are dividing SLAM problem into 2 algorithms :

- Odometry estimation at high frequency (but low fidelity)
- Registration of Point Cloud (lower frequency)

They are presenting their work in a high level of details.

They said that when the lidar scanning rate is high compared to this motion, motion distortion is neglectable and ICP [2] can be used. Other methods exists for removing motion distortion [3] and [4] vor velodyne lidar. Using IMU in multimodal system can compensate intermittent GPS [5].

IMU and loop closure alows to build large indoors maps in underground mines : [6].

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II. Methods

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III. Results

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IV. Discussion

i. Current state

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ii. Possibles enhancements

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