



Coming From

Song by DMX

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Lyrics

Believe me, when I say
Before light, there was dark

Where you going, where you going?
Where you going, where you going?
Where you going?
If I don't know where I'm coming from
Where would I go?
If I don't know where I'm coming from
Where would I go?
If I don't know where I'm coming from
Where would I go?
If I don't know where I'm coming from
Where would I go?

Figure: *Coming From* lyrics. Source: google

Current methods:

- Robust; need motion, time
- Fast; assume environment structure, not robust, need tuning

Real world:

- Uncertain

Us:

- Demand accurate, reliable, repeatable, out-of-the box solutions

- One-shot global localisation: 2D map + 2D LIDAR
- Motion, Environment structure, Parameter-tuning
- Basis: Cumulative Absolute Error per Ray metric

Experiments

Real-world:

- 180 m²
- Noisy map
- 6669 range measurements

} 99.1% < 0.50 m @ 1.6 sec

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Synthetic:

- ↓ Maximal radial range
- ↓ Angular field of view
- ↑ Measurement noise
- Repeated surroundings

min errors; max #poses with error < 0.50 m



Figure: [github link to ROS C++ code](#)