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【208】Positioning Systems Based on Geomagnetic Distortions in Indoors Environments

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Over the past years there have been several approaches to find positioning techniques in indoors environments. Methods based on Bluetooth beacons, Wi-Fi and other infrastructures are common but come with high installation and recurrent maintenance costs.
This work attempts to exploit geomagnetic field distortions caused by a building's ferromagnetic structural elements for landmark detection and, by combination with Pedestrian Dead Reckoning, build an algorithm which reconstructs a travelled path based only on data recorded by the smartphone's accelerometer, gyroscope and magnetometer sensors.
The results are compared to current efforts concerning geomagnetism based indoors localization systems. Finally, accuracy bottlenecks and possible improvements are discussed.

Author: Mr FODOR, Patrick (University of Vienna)

Co-author: Prof. KREXNER, Gerhard (University of Vienna)

Presenter: Mr FODOR, Patrick (University of Vienna)

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