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ScanMu: Muon Tomography using RPC detectors to reduce the human carbon footprint

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Global warming is one of the biggest challenges of mankind due to non-linear, self-enhancing (exponential) dependencies of the climate on human-made factors. The production of concrete for the construction industry is responsible for 5-8% of the global carbon footprint. A solution could be extending the lifetime of buildings and civil infrastructure. A key requirement for this is the ability to scan reinforced concrete to determine its structural integrity and remaining life span. After a brief overview of muon tomography as a novel, destruction-free method to scan reinforced concrete and other sealed large objects using cosmic ray muons, the talk will focus on our idea to adapt the tracking stations similar to those of the ANUBIS detector for the purpose of muon tomography, and outline some key performance parameters and challenges towards the realisation of a real-life demonstrator.

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