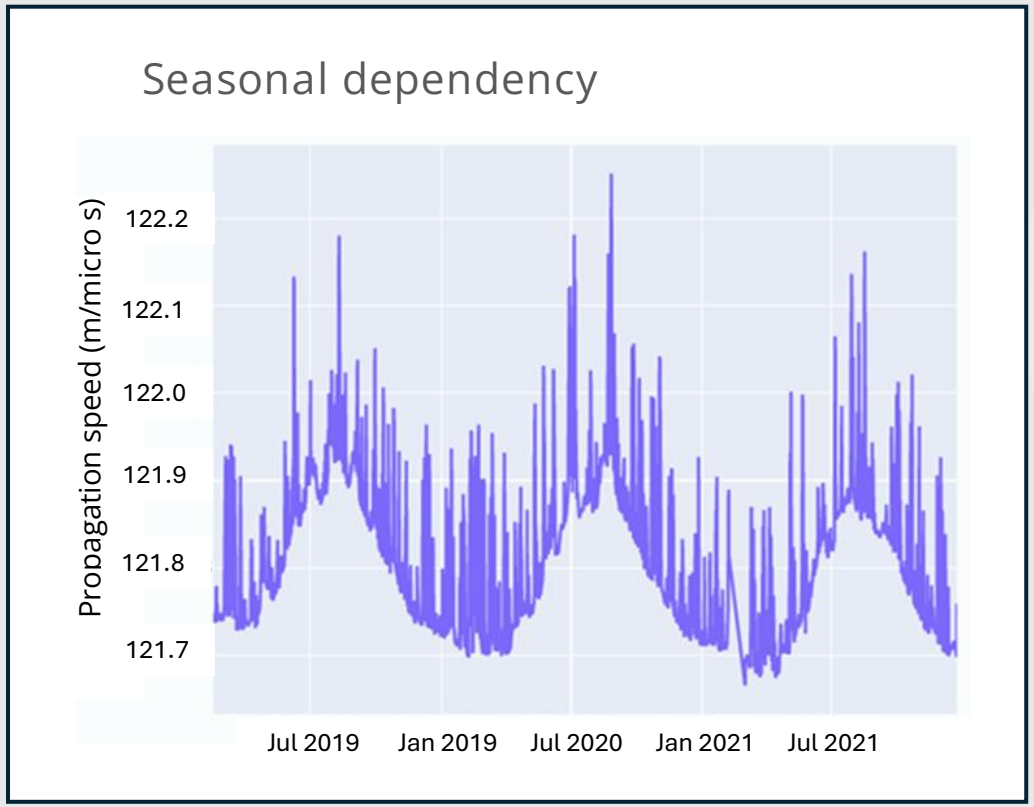
DUTCHPOWER

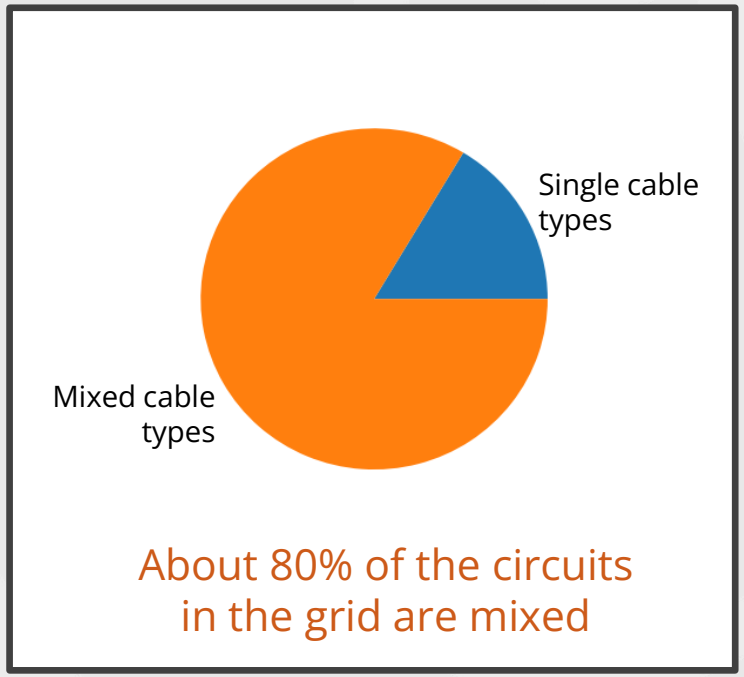
Poster **598**

ESTIMATING **CABLE TEMPERATURE** IN **MIXED CIRCUITS** WITH TIME-DOMAIN **REFLECTOMETRY**

Alejandra Jiménez-Rosales,
Ferran Faura-Iglesias,
Niek Eggink, Sander Rieken

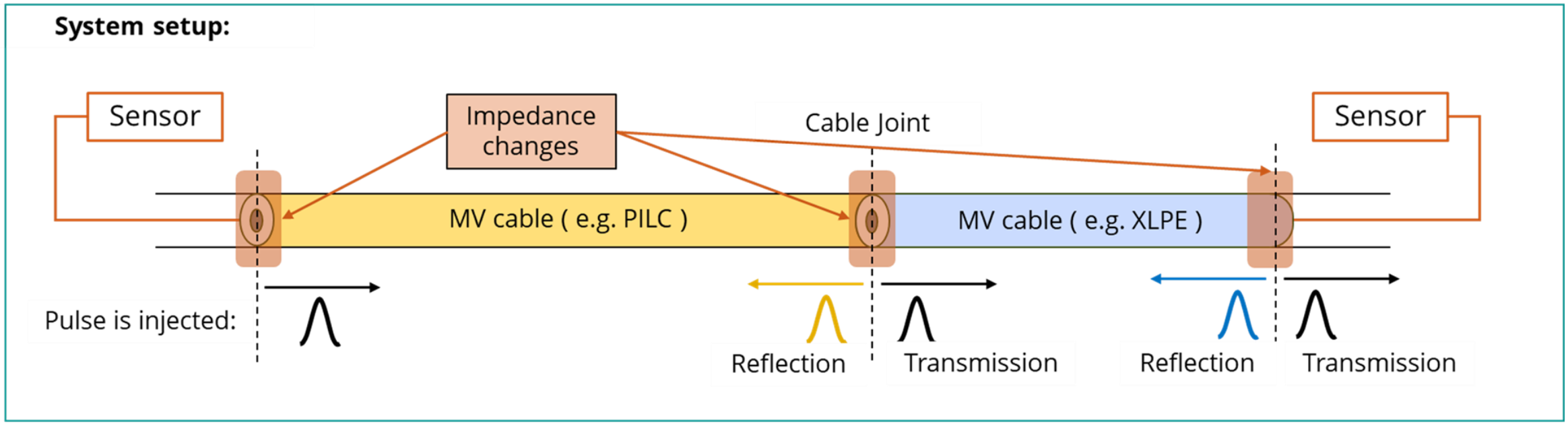
Propagation time in circuits depends on **temperature**



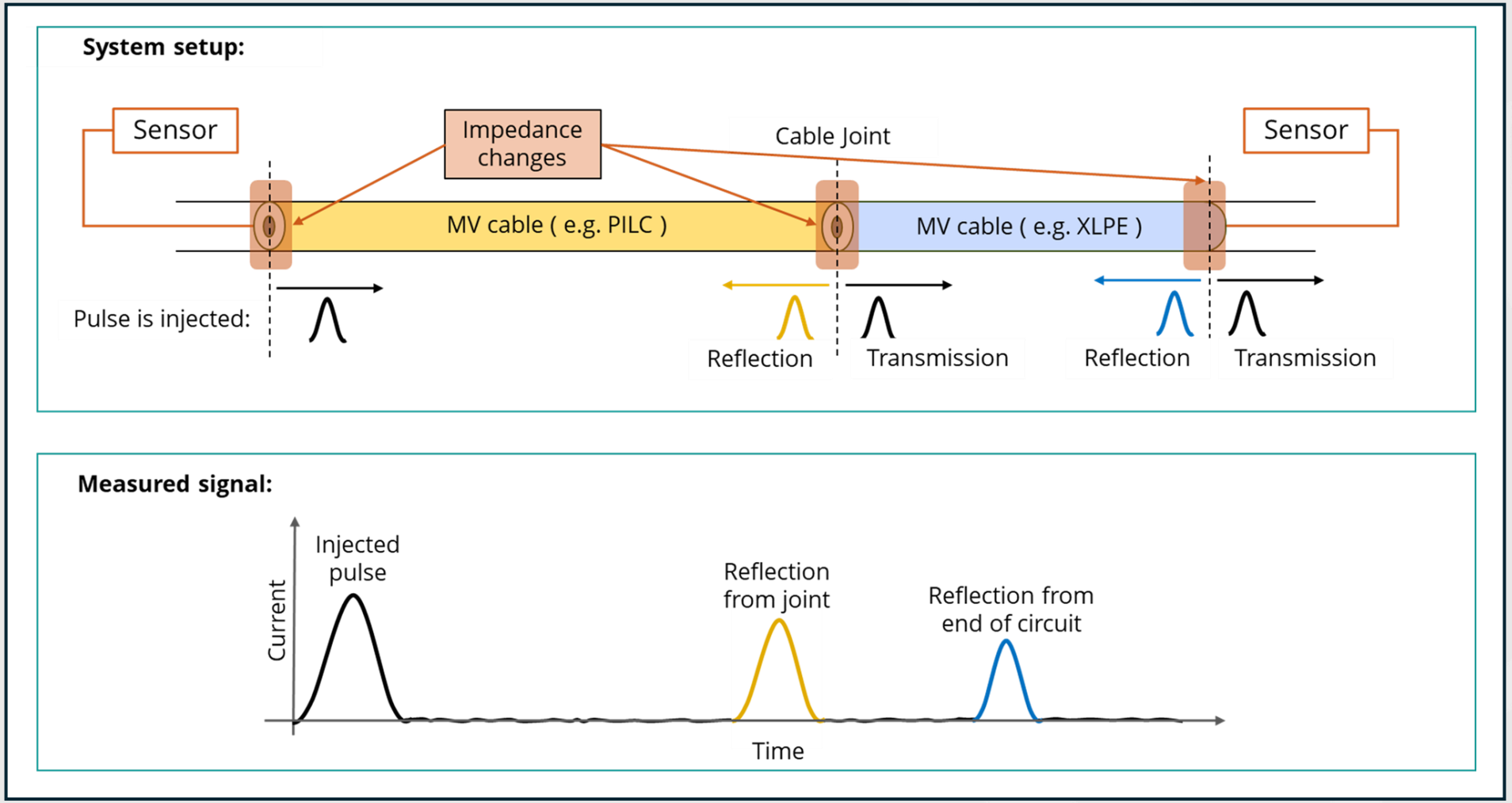


About 80% of the circuits in the grid are mixed

Time-domain Reflectometry



Time-domain Reflectometry



Application in the field

- Method provides **non-invasive, cost-effective, real-time temperature monitoring** in mixed-cable circuits**.**
- Does **not require** detailed **soil type or laying conditions** data**.**
- We detect very **small hourly shifts in the pulse reflections** with a temporal **accuracy of ±0.04 µs**.
- We match these shifts to **relative temperature changes** of around **±4°C.**

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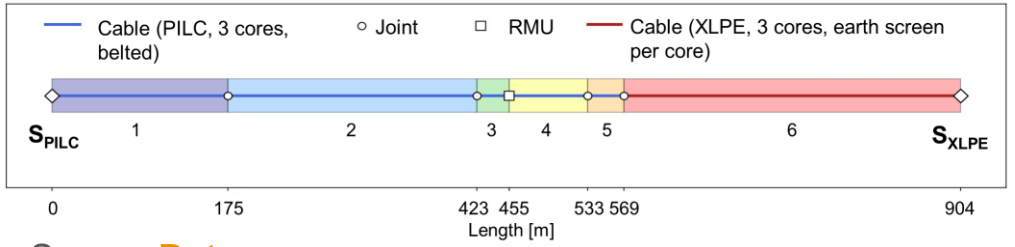
Circuit configuration:



Sensor Data: