

Going the extra mile to boost interest in electric cars

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The main drive toward electric vehicles comes from the environmental urgency of eradicating our dependence on fossil fuels, reducing local pollution levels, and cutting greenhouse gas emissions by turning to

sustainable and renewable power. However, there are some perceived obstacles on the road that are putting the brakes on the transition for many drivers. One of those is the range that a vehicle can achieve on a single charge. This is especially critical for long-distance journeys through places with limited fast-charging infrastructure.

Research in the *International Journal of Vehicle Performance* discusses a novel approach to determining the range of an electric vehicle under real driving conditions. Carlos Armenta-Déu of the Complutense University of Madrid, Spain, and Erwan Cattin of the Université Clermont Auvergne in Aubière, France, suggest that their approach has the potential to give drivers of [electric vehicles](#) the most accurate prediction of range. In their simulations, [road](#) characteristics and five different driving modes are assessed.

The team explains that their software, in taking into account all relevant parameters, driving conditions, road characteristics, and driver style (braking and acceleration) allows them to give the driver that vital piece of information when they are out on the road—how far they can go before needing a battery recharge. At the end of the driving day, the system also tells the driver how much charge is needed in their battery and indicates the putative range for the next day's driving.

The approach, the researchers say, is more accurate than other methods for range prediction and can work for disparate driving conditions and driving style as well as the degree of "aging" in the vehicle's battery.

Armenta-Déu and Cattin explain that although driving range has been improved in the last few years, it continues to be the most important challenge researchers and the industry have to face to make electric vehicles competitive. When considering the range of conventional internal combustion engine vehicles, electric vehicles often fall short, especially in inter-urban driving, the team adds. Understanding the

performance and how it changes with conditions so that [drivers](#) have a clearer view of the road ahead will help bump start the skeptics in the transition period while electric charging infrastructure is being topped up.

More information: Erwan Cattin et al, A new method to determine electric vehicle range in real driving conditions, *International Journal of Vehicle Performance* (2022). [DOI: 10.1504/IJVP.2023.10052227](https://doi.org/10.1504/IJVP.2023.10052227)

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