DISCUSSION

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Why so inaccurate? A comment on the *Itiner-e* dataset of the roads of the Roman Empire

Introduction

In a recent volume of *Scientific Data*, de Soto et al. (2025) published an article presenting the results of their work on a digital dataset of the road network of the Roman Empire. Gathering the data of the whole Roman road network on a single platform is an enormous, but welcome enterprise. Yet already a quick peek at the digital map reveals unexpected inaccuracies that cannot be left without a comment.

My expertise on the subject is focused mainly on a small corner of the entity of the Ancient Roman road system, that is the public roads departing from Rome itself and in particular Via Salaria and Via Tiburtina (see Fig. 1) – which I had, despite of scarce funding, a chance to study for a short amount of time when beginning my doctoral studies in Archaeology a bit over ten years ago at the University of Oulu. On the pretext of productivity, the university soon made the decision to abolish first the subject of Classical Archaeology and, after, the whole field of Classical studies. Seeing now, a decade later, the digitized map on the *Itiner-e* website seems to suggest that the tragedy possibly was not solely a personal one.

Discussion

To begin with, even the beginning bobs up misplaced. The digitized map on the *Itiner-e* website suggests that the road lines of Rome's public roads began from the Forum Romanum. This misconception is perhaps

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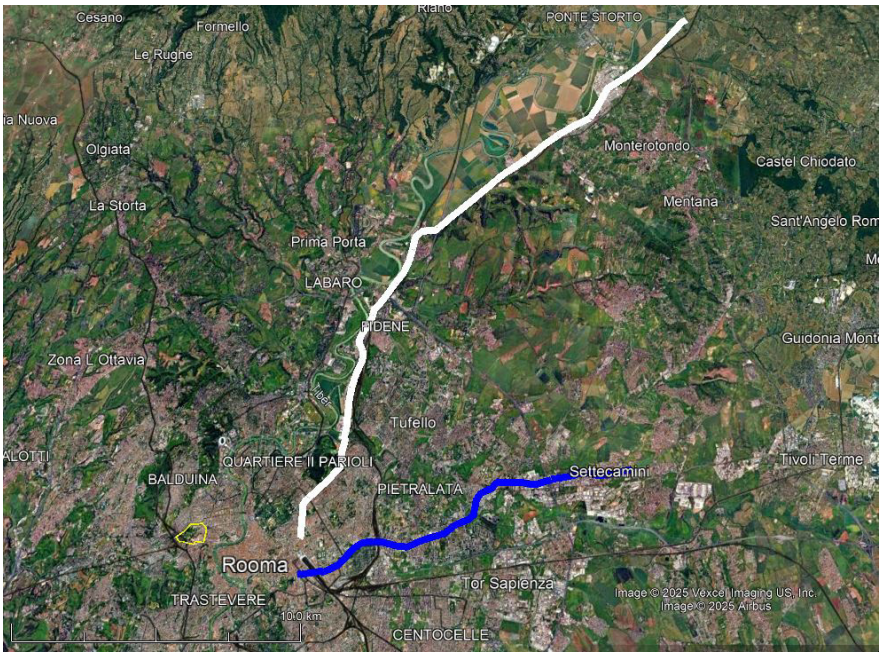

Fig. 1. The road lines of ancient Via Salaria (on white) and Via Tiburtina (on dark blue) at the proximity of Rome based on the studies of the author (figure: Google Earth, markings by the author). Due to non-existent funding, the studies ended on the 19th mile on Via Salaria and on the 10th on Via Tiburtina.

caused by the "Golden Milestone" (*Milliarium aureum*); the theoretical, but more importantly, propagandistic mile zero of all the roads of the Empire, erected in the proximity of the Temple of Saturn by the orders of Emperor Augustus. Yet anyone familiar with the subject must be aware that the true physical starting point of each public road was instead its gate in the so-called "Servian" wall. This dislocation causes a deviation of the road line right from the start and leads in to a systematic error when measuring the distances on the road: for example, according to *Itiner-e*, the ancient Via Tiburtina unluckily was deviated not only from Porta Esquilina, its gate in the (4th century BCE) "Servian" wall, but also from Porta Tiburtina, the gate through which it passed the (3rd century) Aurelian wall (Fig. 2)!

Examining, then, the reconstructed road lines of ancient Via Salaria and Via Tiburtina on the *Itiner-e* map, it is easy to observe how the suggested road lines follow the modern roads that carry their names. In various locations, this is unquestionably correct. However, the accuracy of

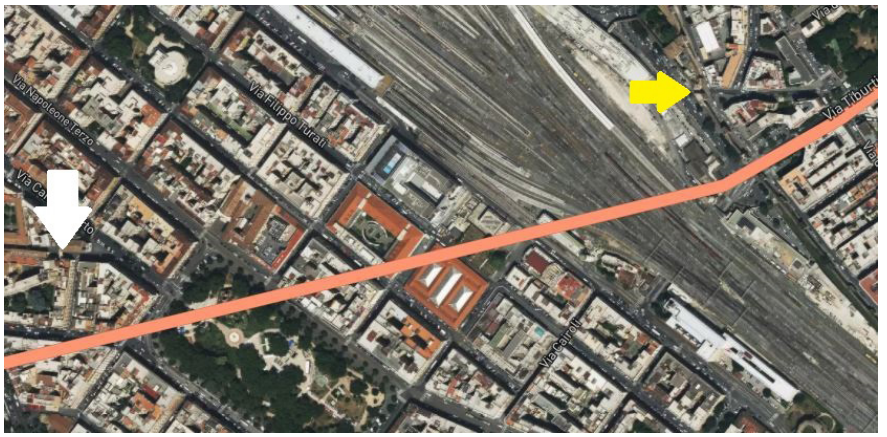

Fig. 2. The road line of ancient Via Tiburtina south of Stazione Termini according to *Itiner-e* (on red) and the location of Porta Esquilina (marked with white arrow on the left) and Porta Tiburtina (yellow arrow on the right). In reality, the ancient road passed through the gates (figure: screenshot Jan 28, 2026 from https://itiner-e.org/, arrows added by the author).

the reconstructed road lines on the digital map is an issue that at first sight makes an educated observer question one's vision. Taking the 10th mile of Via Salaria as an example, it is quite easy to notice the ghost of the ancient road in the field (Fig. 3) – at least on this occasion, even the most widely available aerial photographs and satellite images decipherable for everyman seem to have been left ignored by the scholars in the project (for examples see Hyppönen 2014).

Fig. 3. The arrow points to the trace of the road line of the ancient Via Salaria in the field. The ancient road line, according to *Itiner-e* on blue (figure: screenshot Jan 28, 2026 from https://itiner-e.org/, arrow added by the author).

In addition to the satellite imagery left in disregard, the reconstructed road lines on the *Itiner-e* map also suggest that quite a pile of easily available archaeological reports has been left without a look for the study (take a look, for example, only at Gioia (2014), an information booklet destined for the general public!). As regards direct archaeological remains related to the ancient Via Tiburtina, an enormous amount of information has not made it to the map: for a sample a screenshot (Fig. 4) from *Itiner-e* map on the location where the 9th milestone of the ancient road was found *in situ* in a context, where in several occasions also the paving of the ancient road has been witnessed (Fig. 5) – the road line suggested by *Itiner-e* is thus several hundreds of meters deviated.

Fig. 4. The arrow points to the location where the 9th milestone of ancient Via Tiburtina was found *in situ*, some 350 meters north of the road line (on red) suggested by *Itiner-e*. The milestones were situated right by the road; the suggested road line is thus hundreds of meters wrong (figure: screenshot Jan 28, 2026 from https://itiner-e.org/, arrow added by the author).

Fig. 5. Pavement of ancient Via Tiburtina and the 9th milestone of the road *in situ* (photo: the author).

Conclusion

For all reason all this information should have been consultable to the scholars of the *Itiner-e* project. This brings up the question of how widely the aforementioned problems of inadequate and inaccurate information concern the whole dataset and to what extent the road lines presented on the digitized map function as mere estimates, not clear scientific signposts of the Roman road network.

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