

## Using electrostatic and electrical prospection seeking the limits of the Roman forum of Bayeux (Calvados France)

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### Résumé:

In 2010, archaeological excavation at the 10 rue Franche bring to light the remains of what looked like the roman forum of the Baïocasses, former inhabitant of the city. Unfortunately, the area investigated do not show any limits. A geophysical survey was then undertaken to gather some knowledge about the surroundings of the excavation. The survey was made in two steps the first one in 2011 and the second one in 2013.

The first survey was held on the 8 and 14 rue Franche. At the time, only classical electrical prospection device was available. The survey was limited to place with grass where a good galvanic contact could be achieved. However, some alignments in the resistivity contrasts are in good agreement with the directions known formerly by archaeologist. Especially, a potential north corner of the forum place has been discovered and a first extent of the forum place was proposed (figure 1).

The second survey was undertaken to complete the maps around the 10 rue Franche and to better constrain the shape of the forum place. Provided with a new electrostatic device (Flageul et al; 2013) we have prospected all the areas including the streets themselves (Franche and des Ursulines) and all the part of the gardens where classical electrical prospecting with electrodes could not be achieve.

The results of both surveys have been gathered and it appears that:

- The prospection along both street are quite noisy, this is mainly due to the modern pipes and sewers. Nonetheless, the area of each survey could be divided in three parts, two resistive ones surrounding a conductive one. These limits appear to be coherent with the first extent proposed. Furthermore, these new results drive us to say that the forum place do not go far after crossing the street.
- However, the survey located at the 12 rue Franche exhibits high value of resistivity. The location of this resistive feature is not according with the hypothesis of the forum appearing as an area with lower resistivity values.

According to these results, two hypotheses now compete. The first one, considering that the resistive feature at the 12 rue Franche is from the roman period and then that the Forum place did not extend under the 12 and stop at the limit of the 10. The second possibility is that the resistive feature is included in the forum extent. And then, the extent could run to the 14 rue Franche like in the 2011 proposal.

This study shows that electrostatic prospecting could bring useful archaeological information and that it could be use intensively in urban context where achieving good galvanic contact could be difficult. On our site, it permits to give some new information to better constrain the extent of the Roman forum and to guide future archaeological investigation.