

DIGITAL IRON AGE: DATA ANALYSIS USING MYSQL AND QGIS

The interdisciplinary e-learning project “EisenzeitDigital” or “Digital Iron Age” pursues two aims. In the first place, its goal is to record as many Iron Age sites in Bavaria as possible in a MySQL database and to analyse their distribution, for example in relation to topography, geology, soil quality, and hydrology using both the program QGIS for a visual approach and (My)SQL for an analysis based on algorithms. Secondly, students learn how to create and to handle a relational database, how to use a GIS and how to bring these two different tools to interact in a fruitful way. In addition to that, students are shown how (archaeological) data are to be organized or structured in a relational format in order to draw conclusions from analytical approaches. Furthermore, the project is committed to the consequent use of internet technology, thus providing up-to-date means of accessibility and cross-project linkage of data and information.

The University of Munich (LMU) currently funds the project as an e-learning class. The MySQL database and the program QGIS both are accessible on a virtual platform called “Digital Humanities Virtual Laboratory” (DHVLab), which has been developed as a teaching platform as part of the initiative Digital Campus of Bavaria (Digitaler Campus Bayern).



QR-Code:
Dokumentation
of the EZD
class 2018

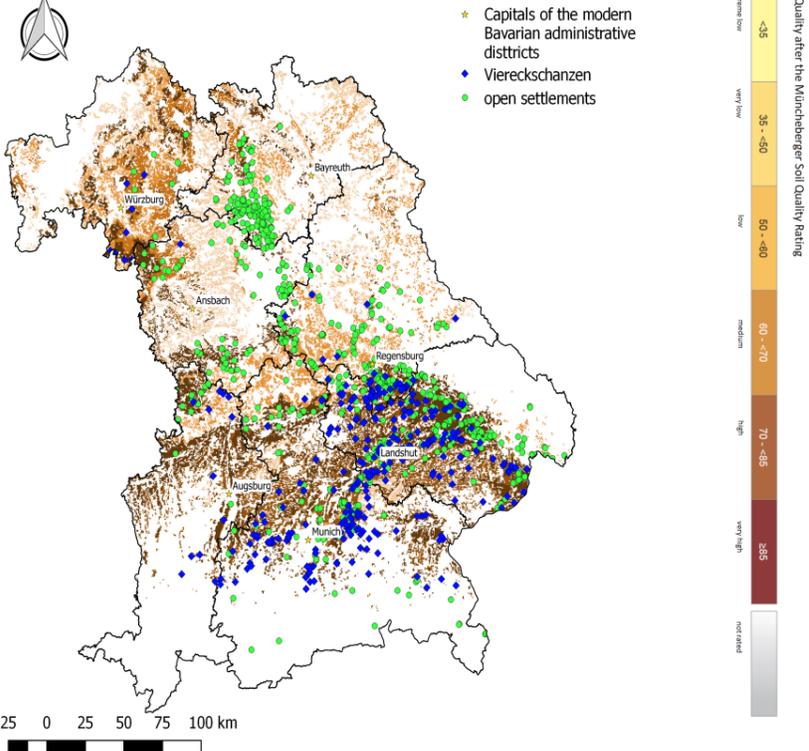
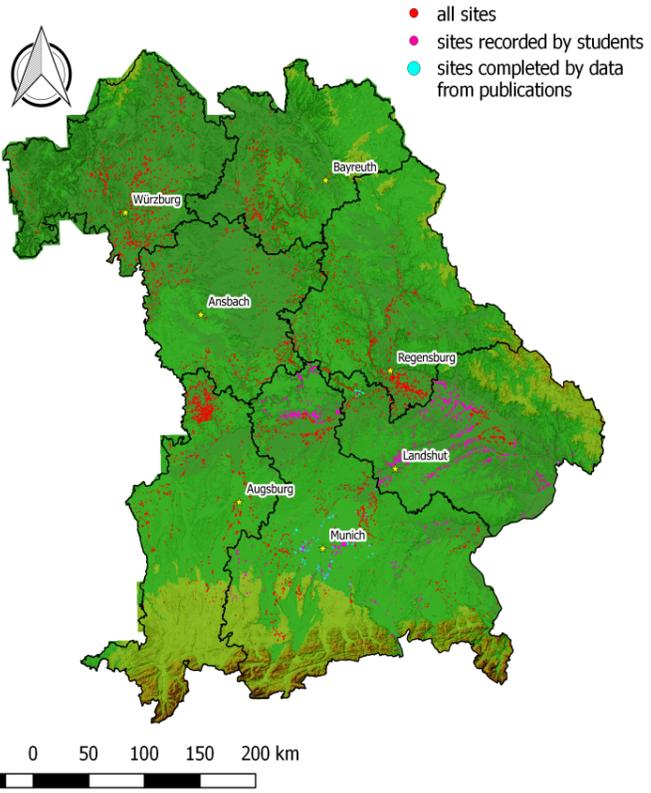


Fig. 2: Iron age settlements in relation to soil quality. Data: SQR1000 V1.0, (C) BGR, Hannover, 2013.



A case study dealing with the so called *Viereckschanzen* (square enclosures, formed by a earthen rampart and a ditch) of the Late Iron Age illustrates the project’s potential. These farmsteads dating to the second and first centuries BC were frequent in areas which were particularly favourable for prehistoric settlements and agriculture, showing a high soil quality (Fig. 2), a high annual mean daily insolation (Fig. 3), and an easy access to watercourses. The residents of these farmsteads were thus probably able to produce a surplus of agricultural products, that allowed to feed not only the owners but also one or two dozens of dependants, that were necessary to build the massive enclosures and to run the farmsteads. This hypothesis is corroborated by the fact that rural sites without enclosures predominate in parts of Bavaria during the Late Iron Age, that are less fertile.

Fig. 1: Iron age sites that have been recorded and described in the Digital Iron Age database. Data: FIS, Bavarian State Office of Heritage. Hintergrund: Bayerische Vermessungsverwaltung – www.geodaten.bayern.de

The datasets in the database come from the atlas of prehistoric monuments (Bayerischer Denkmal-Atlas) and the information system (“Fachinformationssystem”, FIS) compiled by the Bavarian State Office of Heritage (Bayerisches Landesamt für Denkmalpflege), and are systematically complemented by data from publications.



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Methodology
of the EZD
Projekt

So far, 4299 sites from 16 districts in Bavaria are recorded in the database (Fig. 1). This data shows clearly how variable the current state of research in different parts of the federal state is. It also allows to identify different settlement and land use strategies in the different ecoregions of Bavaria, and to study the development of settlement patterns and the relationships of different site types in the long term.

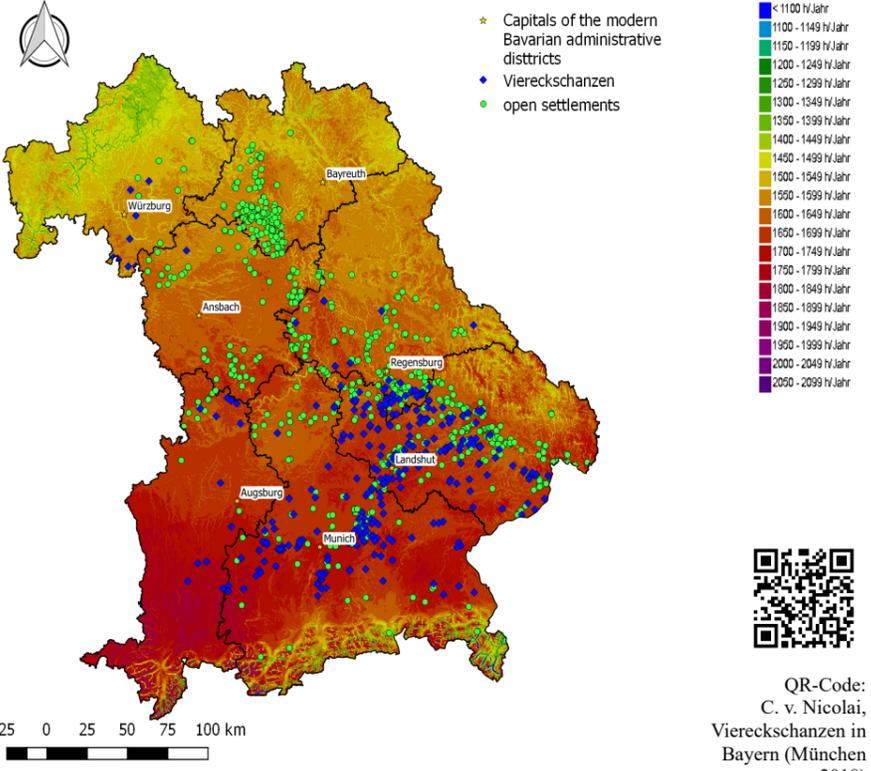


Fig. 3: Iron age settlements in relation to daily insolation. Data: Bayerisches Staatsministerium für Wirtschaft und Medien, Energie und Technologie - www.stmwi.bayern.de



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Viereckschanzen in
Bayern (München
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