



Mapping of Adriatic Sea on Portolan Charts: A Cartometric Analysis

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Abstract

Portolan charts are an early form of nautical charts, produced during late medieval and early modern period by several cultural circles inhabiting coastal regions of the Mediterranean. Accuracy of spatial representation on portolan charts greatly surpasses that of their predecessors, known as mappemundi. Most portolan charts represent cartographic depiction of Mediterranean basin with its integral and surrounding seas, including the Adriatic Sea.

Eleven portolan charts, created during a period of about 300 years (from late 13th to late 16th century), and on which Adriatic Sea is being depicted, have been used as an object of study. A total of 21 points and 43 lines among them that altogether make a triangulated irregular network stretched across the Adriatic Sea have been identified on all 11 charts and georeferenced on three modern map projections over identical control points. This was conducted to examine the overall best fit compared to those projections – chronologically; for each map (containing all the points) individually, and spatially; for every chosen point (across all examined maps) individually. For each of those two aspects, map accuracy has been examined in terms of determining lowest RMSE and average values across three chosen modern projections. Also, deviations from average values, i.e. variations in mapping precision among charts, and also, among chosen points, were examined. This thorough examination of their accuracy and precision has yielded large amounts of quantitative data, which is presented visually using maps and diagrams.

Research results presented here are the preliminary section of author's broader ongoing doctoral thesis research, entitled: Accuracy of Depiction of Adriatic Sea on Portolan Charts.

Keywords: portolan charts, Adriatic Sea, accuracy, cartometric analysis