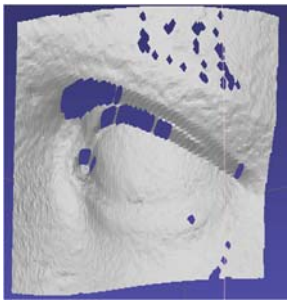

fig. 8. Fragment of the scan

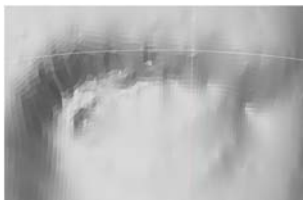

fig. 9. Fragment of model from experiment 1

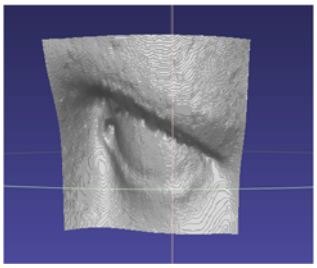

fig. 10. Reconstruction of the scan fragment

4 Conclusion

Laser and optical 3D scanning technologies made possible to solve the task of documenting monuments of history and culture. However, computer 3D-model based on this scans may contain errors, which appear due to omissions of measurements from the scanner caused by various reasons. The experiments demonstrated that the result of reconstruction does not contain the amount or quality of black holes that has the original object. The method used has the following advantages: able to work with irregular data; recover significant gaps in measurements of an irregular shape of a curved surface. Using this method allows us not to solve the triangulation task, which leads to a reduction of computational costs. The proposed approach allows us to improve the quality of a reconstructed 3D surface of an object or its parts using the inverse distance method. Therefore this approach can be applied to the restoration of 3D models of art objects (monuments, sculptures, etc.).

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