# Track Reconstruction and Point Source Searches with Antares

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The picture on the cover was produced with the event display program, A3D, which was developed in the context of the work for this thesis. The image shows a simulated neutrino with an energy of 30 TeV, which interacts just below the sea bed to produce an 11 TeV muon. The optical modules are represented by the small spheres. The larger, coloured spheres represent the hits. The size of the spheres is a measure of the hit amplitude, while the colour encodes the detection time (according to the figure on the back). Lines connecting the hits to the muon track indicate the path of the Cherenkov photons. Hits which are not connected to the muon track are background hits. For clarity, the distance between the optical modules and the string is exaggerated by a factor of four. The grid drawn on the sea bed measures $300 \times 300$ m$^2$.
The image in the background is a photograph of the star Antares (top-right) and its surroundings. I thank the photographer, Rick Krejci, for his kind permission to use this image.

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Adriaan Jacob Heijboer

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Faculteit der Natuurwetenschappen, Wiskunde en Informatica

Aan mijn ouders