

1096-VF-214      **Mimi Tsuruga\*** ([tsuruga@math.tu-berlin.de](mailto:tsuruga@math.tu-berlin.de)), TU Berlin, Str. 17.Juni 136, MA 2-2, 10623 Berlin, Germany, and **Frank H. Lutz**. *Constructing Complicated Spheres*.

As a result of great advancements in technology, we now face the problem that the amount of data we are able to collect far exceeds what we can process. One direction researchers are taking to solve this issue is to simplify the data using topological methods. These simplification algorithms, unfortunately, can only be heuristic at best since the foundations on which they are built — such as finding an optimum discrete Morse vector or recognizing spheres — are NP hard.

To test those heuristics, we have produced triangulations of a space from smooth topology for which such simplification has been shown to be difficult. These simplicial complexes are explicit representations of the Akbulut–Kirby spheres, an infinite series of 4-spheres based on a handlebody construction via finitely presented groups, which were once thought to be exotic. (Received September 12, 2013)