Phat bindings to Gudhi library.

The class *Compute_persistence_with_phat* allows computations of $\mathbb{Z}_2$ persistent homology using Phat software `https://bitbucket.org/phat-code/phat`. Phat is a project developed at IST-Austria founded by Ulrich Bauer, Michael Kerber and Jan Reininghaus and contributed by Hubert Wagner. The following algorithms from Phat are avialable in Gudhi:

1. The "standard" algorithm (see [1], p.153), available via the method *compute_persistence_pairs_standard_reduction()*.
2. The "twist" algorithm, as described in [2] (default algorithm) aviailable via the method *compute_persistence_pairs_twist_reduction()*.
3. The "chunk" algorithm presented in [3] aviailable via the method *compute_persistence_pairs_dualized_chunk_reduction()*.
4. The "spectral sequence" algorithm (see [1], p.166) available via the method *compute_persistence_pairs_spectral_sequence_reduction()*.

When using this functionality please acknowledge both Gudhi and the Phat contributors.

References

[1] H.Edelsbrunner, J.Harer, *Computational Topology, An Introduction.* American Mathematical Society, 2010, ISBN 0-8218-4925-5.

[2] C.Chen, M.Kerber, *Persistent Homology Computation With a Twist.* 27th European Workshop on Computational Geometry, 2011.

[3] U.Bauer, M.Kerber, J.Reininghaus, *Clear and Compress: Computing Persistent Homology in Chunks.* [http://arxiv.org/pdf/1303.0477.pdf arXiv:1303.0477]