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Robert Erra*, EPITA, 14/16 rue Voltaire, 94270 Le Kremlin Bicetre, France, and **Marwan Burelle, Alexandre Letois** and **Mark Angoustures**. *Strategies and tactics to approximate the diameter and the center of a graph or a point set*. Preliminary report.

We consider two problems: (1) the Graph Problem: we want an approximation of the diameter and the center of a graph, sparse and very large; and (2) the Point Set Problem: idem for a very large set of high dimensional points. For both problems, we consider data from real-world datasets, so, here very large means: hundred of millions of nodes/points. Points are high dimensional and known algorithms are quite expensive if the dimension is high, for the Graph Problem classical exact algorithms can not be used because of their cubic complexity. These two problems are becoming very interesting, the Graph Problem is concerned with the *web graphs* and the Point Set Problem appears when we want to measure the quality of clusters obtained with algorithms like k-means or KNN. For both problems we need to be able to compute the eccentricity of a node or a point. These distinct problems are algorithmically similar: *i.e.* the best algorithms that solves these problems follows quite identical strategies and tactics. So, we will present and compare the best known strategies and tactics and we will show how to adapt algorithms developed for one of the problem to the other problem. We will give results with experiments on real datasets of very large size. (Received September 20, 2016)