Table 1: Allocentric, metric representation, optimization based controllers (TEB) vs Egocentric, sensor-based, reactive controllers (PG)

TEB Implementation Choice	**Comparison to PG**
Soft-constraint optimization	
May result in infeasible final paths	Constrain trajectory space to feasible space only.
May result in reduction of homology	Each path generation space and final trajecotry is homologically different.
Higher computational cost	Greedily derived paths.
Nonholonomic motion model	Does not consider.
PRM	
Resulting roadmap does not fully explore **local** path space	Gap-based method to utilize world geometry for more comprehensive path exploration.
Homology estimation can be incorrect	Gap-defined trajectory generation space are by definition homologically different.
PG Implementation Choice	
Sensor based representation (also called a perception space approach)	
Scales better than grid approaches.	
Easier to utilize world geometry for forming candidate trajectory space.	
Able to intuitively distinguish trajectory space of different homology.	
Greedily derived paths	
Fast and efficient in trajectory generation.	