Choosing the Analysis Framework

A summary table of the frameworks' features

Framework	Language	Interactive analysis	Batch analysis	Runs on "Laptop"	Online /Realtime analysis	GUI Driven	Speed	Parallel Procesing	Learning Threshold	LCLS Support
psana modules	C++, python	No	Yes	Yes (with virtual box)	Yes (shared memory on monitoring nodes)	No	High	Yes (trivial multiprocessing within a single host)	Low for usage High for development	Yes
psana (python script)	python	Yes	Yes	Yes (with virtual box)	Yes (shared memory on monitoring nodes)	No	High (with MPI parallelization)	Yes (thousands of cores with MPI)	Low	Yes
ami	C++	Yes	No	No	Yes (native framework for monitoring nodes)	Yes	High	Yes (online)	Very low for usage Very high for development	Yes
MATLAB	MATLAB	Yes	Yes	Yes	No	No	Normal	Yes (w/ Parallel Computing Toolbox: parfor, GPU)	Low	Licenses only
IDL	IDL	Yes	No	Yes	No	Yes	Normal	Yes (IDL thread pool)	Low	Licenses only
CASS	C++	Yes	Yes	No	Yes (shared memory on monitoring nodes)	No	High	Yes (multiple threads)	High	No