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Hybrid Decelerator for Cold Molecular Beams IGOR LYUKSYU-TOV, Texas A&M University — We shall discuss design, simulation and operation of the hybrid decelerator to produce cold molecules. Hybrid decelerator is a combination of the counter rotating source of slow molecular beam with the single stage magnetic decelerator. We operate counter rotating source which provide intense beam of molecules/atoms with the speed smaller than 50m/s. This beam can be a source for the single stage magnetic decelerator. For example, by decreasing the molecular oxygen speed with mechanical decelerator down to 50 m/s, one can use a single stage magnetic decelerator with a maximum current less than 360 A, to decrease the speed of oxygen molecules to about 2m/s. Thus, the use of the magnetic stage in hybrid magneto-mechanical decelerator, can provide slow molecular beams with high intensity.

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