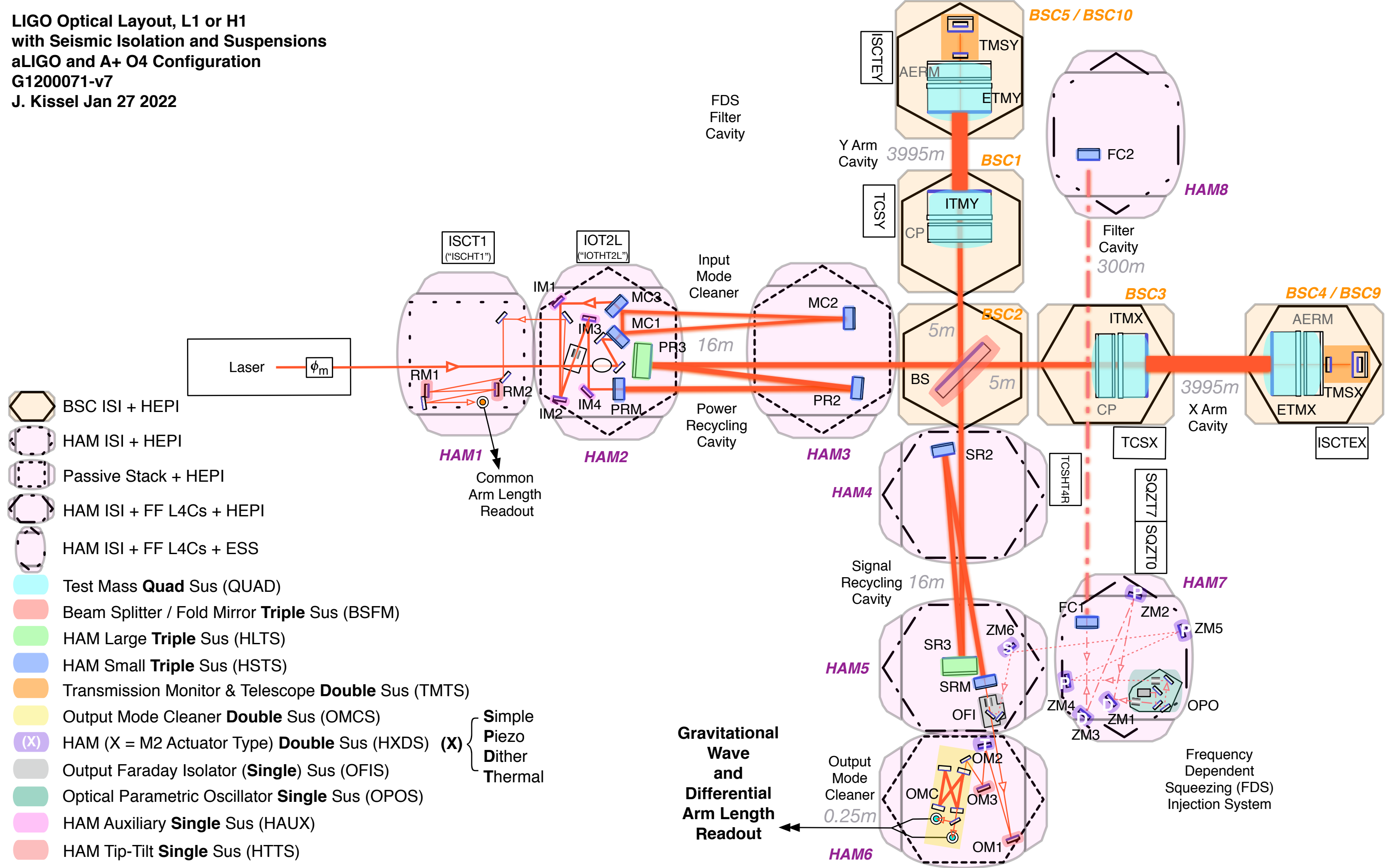


















**LIGO Optical Layout, L1 or H1  
with Seismic Isolation and Suspensions  
aLIGO and A+ O4 Configuration  
G1200071-v7  
J. Kissel Jan 27 2022**



-  BSC ISI + HEPI
-  HAM ISI + HEPI
-  Passive Stack + HEPI
-  HAM ISI + FF L4Cs + HEPI
-  HAM ISI + FF L4Cs + ESS
-  Test Mass **Quad** Sus (QUAD)
-  Beam Splitter / Fold Mirror **Triple** Sus (BSFM)
-  HAM Large **Triple** Sus (HLTS)
-  HAM Small **Triple** Sus (HSTS)
-  Transmission Monitor & Telescope **Double** Sus (TMTS)
-  Output Mode Cleaner **Double** Sus (OMCS)
-  HAM (X = M2 Actuator Type) **Double** Sus (HXDS) (X) } Simple  
Piezo  
Dither  
Thermal
-  Output Faraday Isolator (**Single**) Sus (OFIS)
-  Optical Parametric Oscillator **Single** Sus (OPOS)
-  HAM Auxiliary **Single** Sus (HAUX)
-  HAM Tip-Tilt **Single** Sus (HTTS)

**Gravitational  
Wave  
and  
Differential  
Arm Length  
Readout**

Frequency  
Dependent  
Squeezing (FDS)  
Injection System