X_2 **(Noise)** $\sim \chi^2(n_2)$ over $[0, X_2 \text{ (SSE)}]$; X_1 **(Signal)** $\sim \chi^2(n_1, 2\lambda)$ over $[X_2 \text{ (SSE)}, X_1 + X_2 \text{ (SST)}]$