Speaker: Naoya Ando (Kumamoto University, Japan)

Title: The $SO(3,1)$-orbits in the light cone of the 2-fold exterior power of the Minkowski 4-space

Abstract: In this talk, we see that each $SO(3,1)$-orbit in the light cone $L(\bigwedge^2 E_1^4)$ of the 2-fold exterior power $\bigwedge^2 E_1^4$ of the Minkowski 4-space E_1^4 is either a neutral hypersurface in $L(\bigwedge^2 E_1^4)$ homothetic to one of the two orbits $\mathcal{H}_\pm$ through $(1/\sqrt{2})(e_1 \wedge e_2 \pm e_3 \wedge e_4)$ respectively or a hypersurface with a two-dimensional involutive distribution where the induced metric is degenerate. The difference between these hypersurfaces can be understood in terms of the r-slice of $L(\bigwedge^2 E_1^4)$ for $r > 0$.