ASG ($\sim$ flat$_4$)

$\mathscr{I}^+$

Poincaré $\quad \mathscr{I}^+ \simeq CS^+ \times \mathbb{R} \longmapsto \mathbb{C}^2 \ni (z, \bar{z})$

$SO(3)$ rotations $\quad$ rotations, $\mathbb{1}$ $\quad$ global $SL(2,\mathbb{C})/\mathbb{Z}_2 \simeq SO(3,1)$

boost $\quad$ $\mathbb{1}$, dilations $\quad$ $(Y^z(z),\ Y^{\bar{z}}(\bar{z}))$

(along p^μ, think of little group)

translations $\quad u \quad \ell = 0$, dilation, $*$ $\quad \epsilon \sim$ const.

Spatial $\quad \ell = 1$, rotations, $*$ $\quad$ 1 rotation + 2 translations

Another global $SL(2,\mathbb{C})$

$\downarrow$

Super-trans $\quad \sim$ Vir generators, $\epsilon(z,\bar{z})$

——— BMS^+ so far

rotation + boost

$\rightsquigarrow$ Super rotations $\quad$ local Vir' generators

$(Y^z(z),\ Y^{\bar{z}}(\bar{z}))$