Hyper toric variety

(Toric hyper Kähler)

$$T^N \curvearrowright K \curvearrowright \mathbb{H}^N \xrightarrow{\mu} \mathfrak{k}^* \oplus \mathfrak{k}_{\mathbb{C}}^*$$

$$\cup \qquad\qquad\qquad \cup$$

$$\mu^{-1}(\nu,0) \qquad\qquad (\nu,0) : \text{regular}$$

$$\downarrow \qquad\qquad\qquad T^N/K$$

$$\mu^{-1}(\nu,0)/K = M^{4n} \curvearrowright T^n \times S^1 \qquad = \; T^n \times S^1$$

GKM-condition

[Harada-Holm]

E.g.

$$T^{N+1} \supset \Delta \curvearrowright \mathbb{H}^{N+1} \xrightarrow{\mu} \Delta^* \oplus \Delta_{\mathbb{C}}^* \cong \mathbb{R} \oplus \mathbb{C}$$

$$\cup \qquad\qquad\qquad \cup$$

$$\mu^{-1}(\nu,0) \qquad\qquad (\nu,0) : \nu \neq 0$$

$$\downarrow$$

$$\mu^{-1}(\nu,0)/\Delta \cong T^*\mathbb{C}P^N \curvearrowleft T^N \times S^1$$

on fibres