$$\text{filtring } \mathfrak{h} \sqsupset \mathfrak{h} \rtimes \mathfrak{h}$$

$$\text{grading } \mathfrak{h} = \overbrace{\mathfrak{h} \rtimes \mathfrak{h}} \times \overbrace{\mathfrak{h} + \underbrace{\mathfrak{h} \rtimes \mathfrak{h}}} \text{ non-split}$$

$$\mathfrak{h} \rtimes \mathfrak{h} = \mathbb{R} i$$

$$\overbrace{\mathfrak{h} \rtimes \mathfrak{h}}^{\sharp} = \mathbb{R}$$

$$\mathfrak{h} + \underbrace{\mathfrak{h} \rtimes \mathfrak{h}} = \mathbb{R}^{nn}\, i$$

$$\overbrace{\mathfrak{h} + \underbrace{\mathfrak{h} \rtimes \mathfrak{h}}}^{\sharp} = \mathbb{R}^{nn}$$

$$\text{strating } \overset{\sharp}{\mathfrak{h}} = \overbrace{\mathfrak{h} \rtimes \mathfrak{h}}^{\sharp} \cup \overbrace{\mathfrak{h} + \underbrace{\mathfrak{h} \rtimes \mathfrak{h}}}^{\sharp} \text{ non-split}$$

$$\text{filtring } \mathfrak{h}_0 \underset{\restriction 1}{\sqsubset} \mathfrak{h}_1 \underset{\restriction 2}{\sqsubset} \cdot\cdot \underset{\restriction r-}{\sqsubset} \mathfrak{h}_{r-} \underset{\restriction r}{\sqsubset} \mathfrak{h}_r = \mathfrak{h} = \mathfrak{h}_0 \times \mathfrak{h}_{\restriction 1} \times \mathfrak{h}_{\restriction 2} \times \cdot\cdot \times \mathfrak{h}_{\restriction r-} \times \mathfrak{h}_{\restriction r} \text{ grading}$$

$$\text{comm } \mathfrak{h}_{\restriction k} = \mathfrak{h}_k + \overset{\downarrow}{\mathfrak{h}}_{k-}$$

$$\text{parting } \mathfrak{h}^{\sharp}_{\restriction 0} \cup \mathfrak{h}^{\sharp}_{\restriction 1} \cup \cdot\cdot \mathfrak{h}^{\sharp}_{\restriction r-} \cup \mathfrak{h}^{\sharp}_{\restriction r} = \mathfrak{h}^{\sharp} = \mathfrak{h}^{\sharp}_r \underset{\mathfrak{h}^{\sharp}_{\restriction r}}{\supset} \mathfrak{h}^{\sharp}_{r-} \underset{\mathfrak{h}^{\sharp}_{\restriction r-}}{\supset} \cdot\cdot \underset{\mathfrak{h}^{\sharp}_{\restriction 2}}{\supset} \mathfrak{h}^{\sharp}_1 \underset{\mathfrak{h}^{\sharp}_{\restriction 1}}{\supset} \mathfrak{h}^{\sharp}_0 \text{ strating}$$

$$\mathfrak{h}^{\sharp}_k = \mathfrak{h}^{\sharp}_{\restriction 0} \cup \mathfrak{h}^{\sharp}_{\restriction 1} \cup \cdot\cdot \cup \mathfrak{h}^{\sharp}_{\restriction k} \text{ non-closed } k < r$$

$$\mathfrak{h}_0 = \mathfrak{h} \rtimes \mathfrak{h} \sqsubset \mathfrak{h}_1 = \mathfrak{h}$$

$$\mathfrak{h}^{\sharp}_0 = \mathbb{R}^{\times}$$

$$\mathfrak{h}^{\sharp}_{\restriction 1} = \mathbb{C}^n$$