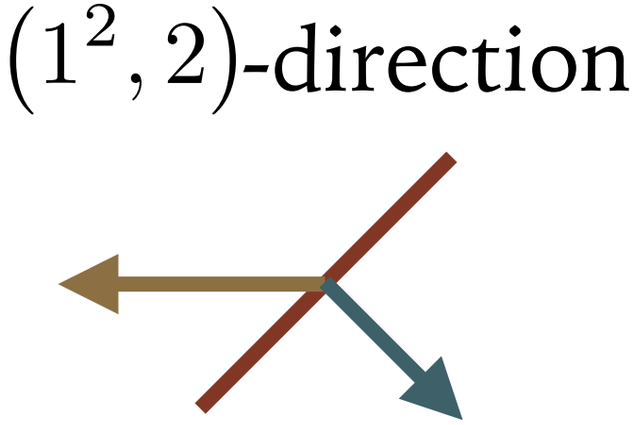

TAXONOMY

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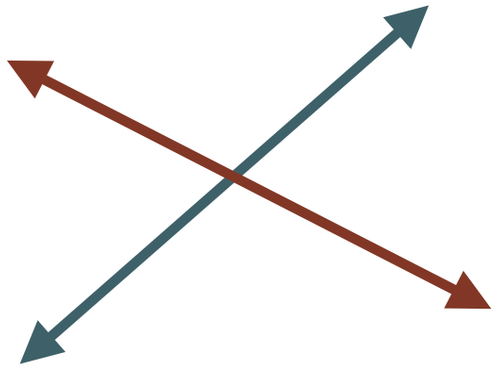
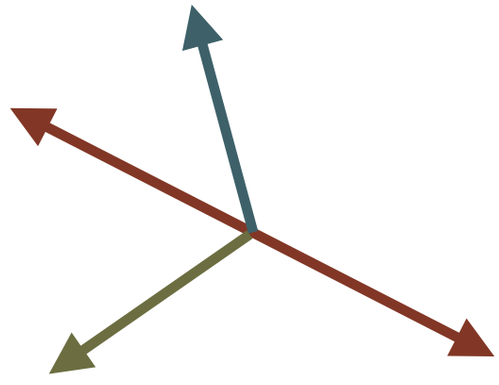
NAMING NAMES



frame field? [Panozzo *et al.* 2014]
non-orth cross field? [Liu *et al.* 2011]
vector or direction?

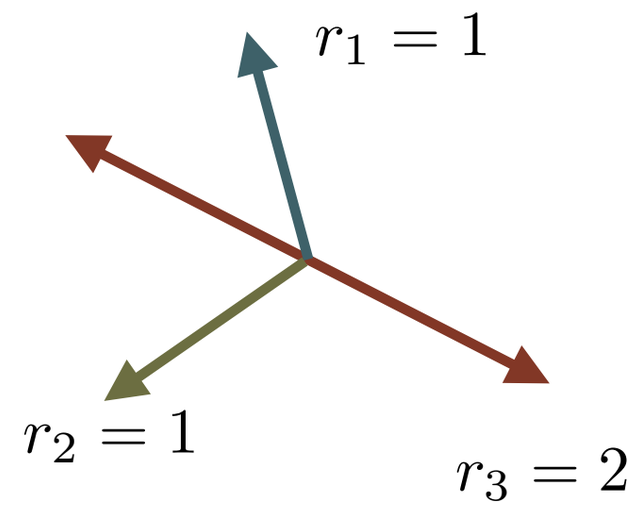


"4-PolyVector including a 2-RoSy"
[Diamanti *et al.* 2014]

A consistent taxonomy of directional fields is required.

TAXONOMY

- Idea: consistent way to describe directionals
- Assumption: total degree N is constant.



$$(r_1, r_2, \cdots, r_k) \in \mathbb{N}^k$$

$$\sum_k r_k = N$$

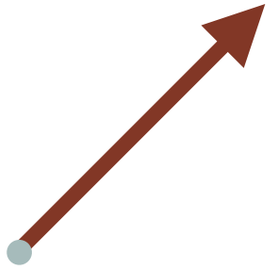
Short form:

$$r_i = r_{i+1} = \cdots = r_{i+m-1} \rightarrow (r_i)^m$$

- Directional has:
  - N elements in total
  - k subsets
  - each subset: r_k RoSy
  - “vector”/“direction”: w/o magnitude

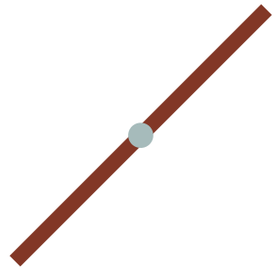
TAXONOMY

1-vector



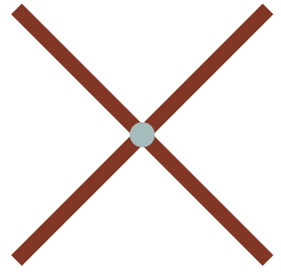
“classical vector”

2-direction



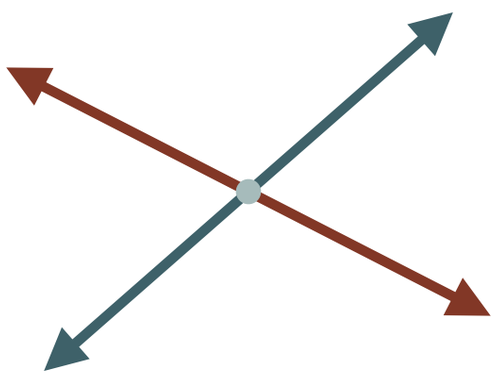
“line”, “2-RoSy”

4-direction



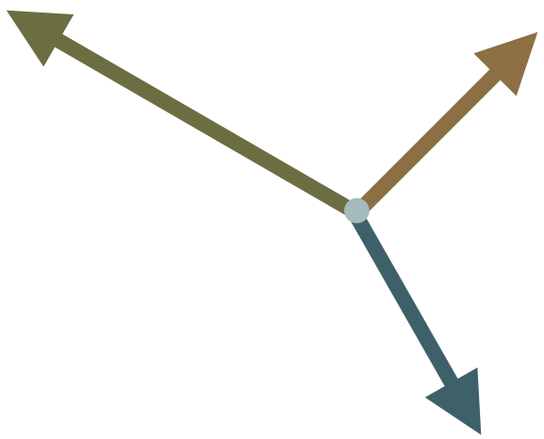
“unit cross”, “4-RoSy”

2^2-vector



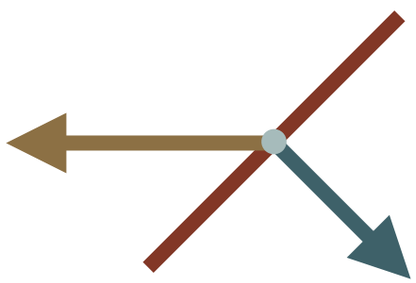
“Frame field”

1^3-vector



“3-PolyVector”

$(1^2, 2)$-direction



“4-PolyDirection including a line”