

# What is in a Diagram?

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We want to generate in a nice way the members of certain classes of partial linear spaces.

For example, we know that all Fischer spaces generated by each one of the simply laced Dynkin Diagrams  $A_n$ ,  $E_6$ ,  $E_7$ , and  $E_8$  are isomorphic. Also we do know that these are the only graphs with this property in this category.

Inspired by these facts and stressing the infinite dimensional case we will generalize some earlier definitions that worked out well for some families of partial linear spaces. So, we take as a diagram for a space in a class  $P$  of partial linear spaces a "generating" (not in the usual graph theoretic sense) graph with certain universal property regarding elements of  $P$ .

Despite it is not the case for all Fischer spaces, we will see that all representable cotriangular partial linear spaces do have diagrams. According to certain combinatorial (geometric) properties we classify those spaces into *arguesian* (for Desargues) and *Reye* types, respectively.

For the arguesian type spaces, including the infinite dimensional ones, we give specific diagrams. For the others, using the universal representation, we show the existence of diagrams and, for the finite dimensional case, we recover some formerly given diagrams.