

**FORTTRAN**

**C++**

**Nested data structures  
in particle physics**

HYDRA  
(1973)

ZEBRA  
(1983)

ROOT  
(1995)

ZBOOK  
(1974)

Objectivity  
(c.1994-2004)

CWN  
in PAW  
(1989)

**Industry solutions**

BOS  
(1975)

YBOS  
(CDF r1)

ProtoBuf  
(2001)

Avro  
(2009)

Arrow  
(2016)

C-Store  
(2005)

Parquet  
(2013)

MonetDB  
(2002)

Dremel  
(2010)

1970

1980

1990

2000

2010

2020