SEVEN THINGS I WOULD HAVE LIKED TO KNOW WHEN STARTING TO WORK ON DOMAIN DECOMPOSITION

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It is not easy to start working in a new field of research. I will give a personal overview over seven things I would have liked to know when I started working on domain decomposition (DD) methods:

1. Seminal contributions to DD not easy to start with
2. Seminal contributions to DD ideal to start with
3. DD solvers are obtained by discretizing 2.
4. There are better transmission conditions than Dirichlet or Neumann
5. “Optimal” in classical DD means scalable
6. Coarse space components can do more than provide scalability
7. DD methods should always be used as preconditioners