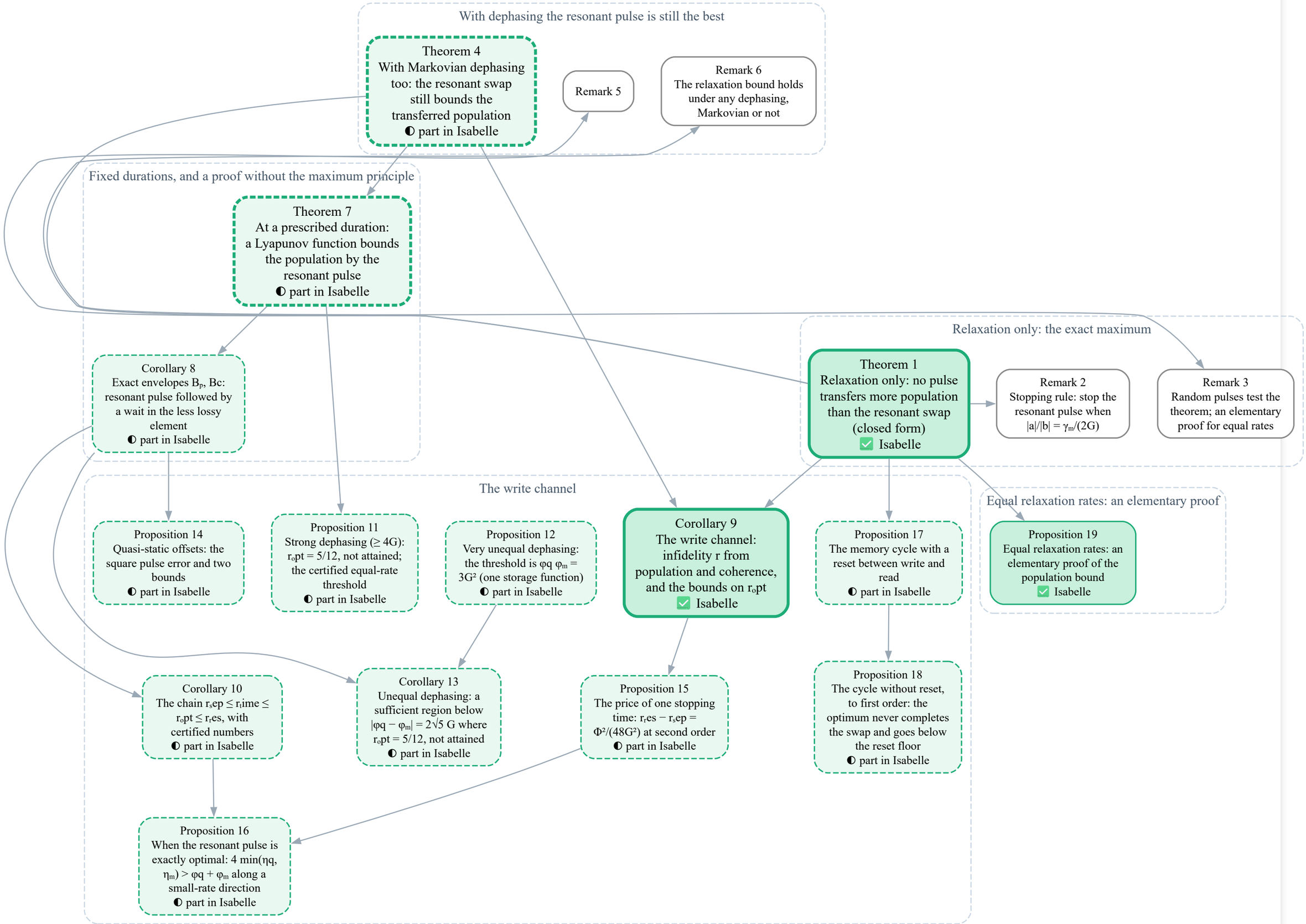
Blueprint

Map of *Exact limits on writing a superconducting quantum memory: when can pulse shaping beat the resonant swap?*

19 results | ✅ **0** entirely in Lean | ◐ **12** partly in Lean | ✅ **3** in Isabelle | **0** checked by a program | written proof only | (a result can carry several tags)

Dependencies in the written proof: an arrow A → B means that this proof of B uses A. Every result rests on its written proof; the tags record what was checked besides, and each statement's "Evidence & scope" block says how far. The colour of a box is its strongest tag, in the order above; the tags in the box give the rest. Boxes with a thick border are the main results; click a box to read the statement.



🚀 **Start here: Theorem 1**: Relaxation only: no pulse transfers more population than the resonant swap (closed form).

Main results:

- **Theorem 1**: Relaxation only: no pulse transfers more population than the resonant swap (closed form)
- **Theorem 4**: With Markovian dephasing too: the resonant swap still bounds the transferred population
- **Theorem 7**: At a prescribed duration: a Lyapunov function bounds the population by the resonant pulse
- **Corollary 9**: The write channel: infidelity r from population and coherence, and the bounds on $r_o$pt