

Controlling a Field (Advanced)

- **Description.** In the **Controlling a Gate** activity, we thought of the atmospheric pressure as rotating the qubit by a gate U after one second. We then assumed we had access to a new gate V , which performs half of the U -rotation. However, we did not explain how to perform the V gate. First, you will figure out how to perform the V gate using only the NV center and the environment. Once you have figured this out, you should try to identify at least one challenge that might be faced when trying to use this in the controlled U gate.
- **Hint.** Circuit diagrams and the ZX-calculus are unlikely to help you here.
- **Submission.** A short paragraph describing your way to implement V and at least one challenge.