Quantum control of spin qubits in silicon[1]

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Doped Si is a promising candidate for quantum information processing due to its potential for scalability, long spin coherence times, and the continuing progress on Si material processing, technology and miniaturization over several decades. I will discuss important issues for single- and two- qubit operations in spin-based quantum computer proposals involving P donors in Si. Our study shows the potential as well as challanges regarding the implementation of such proposals.

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