$\mathcal{S}ZX$: scalable graphical calculus

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The ZX calculus is a graphical language to describe and verify quantum processes. It features nice topological properties and a complete set of rewriting rules. However, diagrams tend to be difficult to manage when involving a large number of qubits. We present an approach to enrich any graphical language in order to describe registers of qubits. We also provide new generators and rules that allow to perform rewriting at large scale. As an exemple we give compact graphical derivations of some properties of graph states.