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ADUSUMALLI et al.(10) **Pub. No.: US 2022/0393697 A1**(43) **Pub. Date: Dec. 8, 2022**(54) **SENSOR CIRCUITS****G01J 1/42** (2006.01)**G01J 1/18** (2006.01)(71) Applicant: **ams International AG**, Jona (CH)(52) **U.S. Cl.**(72) Inventors: **Ravi Kumar ADUSUMALLI**,
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A sensor circuit comprising a sensor input includes a delta-sigma analogue to digital converter. The delta-sigma analogue to digital converter includes a switched capacitor, a common mode voltage source, a reference voltage source, and a switch network. The switch network, in a first clock phase, connects the switched capacitor to charge it to either a sum or difference voltage, and in a second clock phase connects the switched capacitor to transfer charge into a summing junction. A controller controls the switch network responsive to a comparator output to selectively connect the switched capacitor to one of the common mode voltage and the reference voltage in the first clock phase. Implementations of the sensor circuit transfer charge every clock cycle and have low noise and high sensitivity.

