The system for physical quantity measurement and/or for position measurement with a bistable magnetic wire (1), which comprises excitation element (2) for creating of magnetic field and a sensing element (3). Within the range of the magnetic field of the excitation element (2), a bistable magnetic wire (1) is placed, which has a first end (11) and an oppositely placed second end (12). The bistable magnetic wire (1) is adjusted for magnetization by a single Barkhausen jump from the first end (11) to the second end (12) or vice versa, wherein the excitation element (2) and bistable magnetic wire (1) are placed in a mutual position with an asymmetric magnetic field with respect to the bistable magnetic wire (1), where the size of the magnetic field excited by the excitation element (2) at the first end (11) is different from the size of the magnetic field excited by the excitation element (2) at the second end (12). The asymmetry of the magnetic field is created due to the mutual asymmetrical position of the excitation element (2) and the bistable magnetic wire (1) and/or due to the asymmetrical construction of the excitation element (2).