## S-asymptotically $\omega$ -periodic functions and applications to the differential neutral equations

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Abstract. Let X be a Banach space. A bounded continuous function  $u: [0, \infty) \to X$  is said to be S-asymptotically  $\omega$ -periodic if  $\lim_{t\to\infty} [u(t+w) - u(t)] = 0$ . We will show in this conference several relationship between S-asymptotically  $\omega$ -periodic and asymptotically  $\omega$ -periodic functions and some results of existence of S-asymptotically  $\omega$ -periodic mild solutions for some classes of abstract neutral functional differential equations with infinite delay.