

Sufficient conditions for the integrability of dyadic maximal Walsh series

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We consider integrability conditions for dyadic maximal Walsh series. The results presented have been partly published in [1]. In particular, we give a condition on the sequence coefficients of Walsh series that is connected with a dyadic sequence Hardy norm introduced in [2]. It turns to be sufficient for the series being Walsh–Fourier series of a function belonging to the dyadic Hardy space. In the classical trigonometric case the analogue question involves the real periodic Hardy space. Then the problem leads to integrability conditions on both the trigonometric series and its conjugate, which in fact can be reduced to integrability conditions for cosine and sine series. The technique needed in the dyadic case is completely different from it.

References

- [1] Fridli, S. *On the integrability of dyadic maximal Walsh series*, Acta Sci. Math. (Szeged) **81(3-4)** (2015), 561–574
- [2] Fridli, S. *Hardy spaces generated by an integrability condition*, J. Approx. Theory **113** (2001), no. 1, 91–109.