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*Normability of gamma spaces*

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**Abstract:** We give a full characterization of normability of Lorentz spaces  $\Gamma_w^p$ . This result is in fact known since it can be derived from Kamińska A., Maligranda L., *On Lorentz spaces*, Israel J. Funct. Anal. **140** (2004), 285–318. In this paper we present an alternative and more direct proof.

**Keywords:** Lorentz space; weight; normability

**AMS Subject Classification:** 46E30

REFERENCES

- [1] Ariño M.A., Muckenhoupt B., *A characterization of the dual of the classical Lorentz sequence space  $d(w, q)$* , Proc. Amer. Math. Soc. **112** (1991), no. 1, 87–89.
- [2] Carro M.J., del Amo A.G., Soria J., *Weak type weights and normable Lorentz spaces*, Proc. Amer. Math. Soc. **124** (1996), no. 3, 849–857.
- [3] Carro M.J., Soria J., *Weighted Lorentz spaces and the Hardy operator*, J. Funct. Anal. **112** (1993), no. 2, 480–494.
- [4] Kamińska A., Maligranda L., *On Lorentz spaces*, Israel J. Funct. Anal. **140** (2004), 285–318.
- [5] Lorentz G.G., *On the theory of spaces*, Pacific J. Math. **1** (1951), 411–429.
- [6] Sawyer E., *Boundedness of classical operators on classical Lorentz spaces*, Studia Math. **96** (1990), no. 2, 145–158.
- [7] Sinnamon G., Stepanov V.D., *The weighted Hardy inequality: new proofs and the case  $p = 1$* , J. London Math. Soc. (2) **54** (1996), no. 1, 89–101.
- [8] Stepanov V.D., *Integral operators on the cone of monotone functions and embeddings of Lorentz spaces*, Dokl. Akad. Nauk SSSR **317** (1991), no. 6, 1308–1311.