COMPLEX INTERPOLATION OF L^p-SPACES OF INTEGRABLE FUNCTIONS WITH RESPECT TO VECTOR MEASURES

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It is well-known that if (Ω, Σ) is a measurable space, μ a σ-finite scalar measure, $0 < \theta < 1 \leq p_0 \neq p_1 \leq \infty$ then the interpolated space between the spaces $L^{p_0}(\mu)$ and $L^{p_1}(\mu)$ by the first and the second Calderón methods is the space $L^{p_1}(\mu)$, where $\frac{1}{p} = \frac{1-\theta}{p_0} + \frac{\theta}{p_1}$, that is

$$[L^{p_0}(\mu), L^{p_1}(\mu)]_{[\theta]} = [L^{p_0}(\mu), L^{p_1}(\mu)]^{[\theta]} = L^p(\mu) \tag{1}$$

In this talk we will answer the following question:
What happen with the equalities (1) when we consider L^p-spaces of integrable functions with respect to vector measure?

References

[1] A. Fernández, F Mayoral, F. Naranjo, C. Sáez and E. A. Sánchez–Pérez, *Spaces of p-integrable functions with respect to a vector measure*, Positivity **10** (2006), 1–16.

[2] R. del Campo, A. Fernández, F Mayoral, F. Naranjo and E. A. Sánchez–Pérez, *Complex interpolation of spaces of integrable function with respect to a vector measure*, Collect. Math. **61** (3)(2010), 241–252.

[3] R. del Campo, A. Fernández, F Mayoral and F. Naranjo, *Complex interpolation of L^p-spaces of vector measures on δ-rings* , J. Math. Anal. Appl. **405** (2013), 518–529.

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