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A NEW SCHAUDER BASIS FOR $L^r((0,1)^n)$, $n=2,3$

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Abstract. We show that under suitable conditions on p, q, and summability, the system of generalized trigonometric functions $\{\Pi_{i=1}^{d}\sin_{p,q}(n_i\pi_{p,q}x_i)\}_{n_1,\dots,n_d}$ is a basis for $L^r((0,1)^d)$ for any $r\in(1,\infty)$ where $d=2$ or $d=3$.

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