p-regularity of bilinear Operators between Banach latices

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We introduce the new class of the $(p; r, q)$-regular bilinear operators between Banach lattices, that is defined using a summability property that provides the bilinear version of the (p, q)-regular operators. We show that every continuous bilinear operators are $(p; r, q)$-regular under some requirements. We find the trace duality representation of this class of bilinear operators by presenting a reasonable crossnorm that satisfies that the topological dual space of an 3-fold tensor product is isometric to the space of $(p; r, q)$-regular bilinear operators.