On the normalizers of subgroups in integral group rings

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Let G be a group, R a commutative ring with identity element and $\mathrm{U}(RG)$ the group of units of RG. For a subgroup H of G the subgroup normalizer problem asks whether H is only normalized by the 'obvious' units, i.e. whether

$$\mathrm{N}_{\mathrm{U}(RG)}(H) = \mathrm{N}_G(H) \cdot \mathrm{C}_{\mathrm{U}(RG)}(H).$$

For $H = G$ this is the well known normalizer problem: the question whether $\mathrm{N}_{\mathrm{U}(RG)}(G)$ equals $G \cdot \mathrm{Z}(\mathrm{U}(RG))$. Martin Hertweck provided a counterexample and this was an important step on his way to give a counterexample to the isomorphism problem for integral group rings.

We will discuss recent developments regarding the normalizer of subgroups of group bases.