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The relationship between two approximate symmetry frameworks

The two most popular and practically useful approaches to calculate approximate symmetries of differential equations with a small parameter are the Baikov–Gazizov–Ibragimov (BGI) and Fushchich–Shtelen (FS) frameworks. We will establish an exact relationship between them. In particular, we will show that BGI approximate symmetries always have FS counterparts, but in some cases, BGI point symmetries correspond to non-point FS symmetries. Also, we will consider examples of FS symmetries having no BGI analogs.