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On a result of Koecher concerning Markov-Apéry type formulas for the Riemann zeta function

In 1980 Koecher derived a method for obtaining identities for the Riemann zeta function at odd positive integers, including a classical result for $\zeta(3)$ due to Markov and rediscovered by Apéry. We extend Koecher's method to a very general setting and prove two specific but still rather general results. As applications we obtain infinite classes of identities for alternating Euler sums, further Markov-Apéry type identities, and identities for even powers of π . (Joint work with Christophe Vignat).