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On Higher Order Lucas-Bernoulli Numbers,
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Abstract

In this note we consider higher order Bernoulli numbers associated to the formal group laws whose canonical invariant differentials generate the Lucas sequences $\{U_n\}$. We first give an explicit formula for these numbers which implies new identities involving the usual higher order Bernoulli numbers and the Lucas sequences $\{U_n\}$ and $\{V_n\}$. We then give an analogue of the Kummer congruences for these sequences which for each prime p depends only on U_p .