▶ ELLIOTT SPOORS AND STAN WAINER, *A hierarchy of ramified theories "around" PRA*.

School of Mathematics, University of Leeds, UK.

E-mail: `s.s.wainer@leeds.ac.uk`.

A two-sorted arithmetic EA(I;O) of elementary recursive strength, based on the Bellantoni-Cook variable separation, is first enriched by addition of quantifiers over "input" or "normal" variables, and then extended, by ramifying higher levels of inputs, to a hierarchy of theories whose provably computable functions coincide with the levels of the Grzegorczyk hierarchy. This may be further extended by introducing numerical inputs of transfinite rank so that, for example, the Ackermann function is obtained at level ω. The methods are those of predicative proof theory, but here they appear "in miniature", controlled by the "slow-growing" bounding functions rather than the "fast-growing" ones.