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*Quotient presentations of structures.*

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A c.e. quotient presentation of a structure \( A = \langle A; \{ f_i \}_{i \in I}, \{ R_j \}_{j \in J} \rangle \) consists of a structure \( A^* = \langle N; \{ f^*_i \}_{i \in I}, \{ R^*_j \}_{j \in J} \rangle \) and a c.e. equivalence relation \( E \) (often called a ceer) such that the functions of \( A^* \) are uniformly computable, the relations of \( A^* \) are uniformly c.e., \( E \) is a congruence with respect to \( A^* \), and \( A^*/E \cong A \). \( E \) realizes \( A \) if \( (A^*, E) \) is a c.e. quotient presentation of \( A \), for some \( A^* \); otherwise, \( E \) omits \( A \). Khoussainov and his collaborators (see, e.g., [2, 3]) investigated, for familiar classes of structures, which structures are realized by a given ceer \( E \). We are interested in the reverse problem, i.e., we study the structure of the following spectra.

**Definition 1.** The spectrum of ceers of a structure \( A \) is the following class of ceers 
\[
\text{CeersSp}(A) = \{ E \in \text{Ceers} : E \text{ realizes } A \}.
\]

During the talk, we will discuss the main motivations for the project and we will demonstrate theorems relating the program to the study of some distinguished classes of equivalence relations, such as those considered in [1].

