examples of conformal algebras is provided by conformal endomorphisms. Let us state the corresponding notion in a little bit more general context.

Let G be a linear algebraic group over an algebraically closed field $\Bbbk$ and let H be its coordinate Hopf algebra. A G-*conformal endomorphism* of a left H-module M is a map $a : G \to \operatorname{End}_{\Bbbk} M$ such that

- for every $u \in M$ the map $\gamma \mapsto a(\gamma)u$ is a regular function from G to M;
- $a(\gamma)h = L_\gamma h a(\gamma)$ for $h \in H$, $\gamma \in G$, where $L_\gamma h : x \mapsto h(\gamma x)$, $x \in G$.

In the case of $G = \mathbb{A}^{\Bbbk} \simeq (\Bbbk, +)$, $\operatorname{char} \Bbbk = 0$, this notion corresponds to the one of [2]. Denote by $\operatorname{Cend} M$ the space of all G-conformal endomorphisms of an H-module M.

Definition 1. *A G-conformal representation of a quantum Leibniz algebra $\mathfrak{g}$ on an H-module M is a linear map $\rho : \mathfrak{g} \to \operatorname{Cend} \mathfrak{M}$ such that*

$$\rho(a)(e)(\rho(b)(\gamma)v) - \sum_i \rho(b_i)(\gamma)(\rho(a_i)(e)v) = \rho([a, b])(\gamma)v,$$

where $\sum_i b_i \otimes a_i = \sigma(a \otimes b)$, $a, b \in \mathfrak{g}$, $\gamma \in G$, $v \in M$, e is the unit of G.

Theorem 1. *If G is a linear algebraic group such that H contains a primitive element then a (finite-dimensional) quantum Leibniz algebra has a faithful G-conformal representation on an appropriate (finitely generated) H-module M.*

For example, every finite-dimensional quantum Leibniz algebra can be embedded into the conformal algebra (over $G = \mathbb{A}^{\Bbbk}$) $\operatorname{Cend} M$, where M is a finitely generated free $\Bbbk[T]$-module.

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PERIODIC GROUPS WITH PRESCRIBED ELEMENT ORDERS

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For a periodic group G, denote by $\omega(G)$ the *spectrum*, i.e. the set of element orders, of G. It is obvious that $\omega(G)$ is finite if and only if G is of finite exponent. Thus, a group with finite spectrum is not necessarily a locally finite group.

The talk contains a survey of known spectra which ensure the local finiteness of corresponding groups. The following recent results are typical.

Theorem 1. *Let $\omega(G) = \{1, 2, 3, 5, 6\}$. Then G is locally finite.*

Theorem 2. *Let $\omega(G) = \{1, 2, 3, 4, 8\}$. Then G is locally finite.*

Theorem 1 is obtained in collaboration with A.S. Mamontov.

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THE BLOCK STRUCTURE OF UNIPOTENT ELEMENTS FROM SUBSYSTEM SUBGROUPS OF TYPE A_3 IN SPECIAL MODULAR REPRESENTATIONS FOR GROUPS OF TYPE A_n

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For $p \geqslant 11$ the Jordan block structure of regular unipotent elements from a subsystem subgroup of type A_3 in p-restricted irreducible representations of the group of type A_n over fields of characteristic p whose highest weights have three consequent zero coefficients is described.

Let $\mathbb{C}$ be a field of complex numbers, $\mathbb{N}$ be a set of positive integers, $\mathbb{N}_a^b = \{i \in \mathbb{N} \mid a \leqslant i \leqslant b\}$, let K be an algebraically closed field of characteristic $p > 0$, $G = A_n(K)$, $n > 3$, and let ω_i ($1 \leqslant i \leqslant n$0 be the fundamental weights of G. A subsystem subgroup of G is generated by root subgroups associated with all roots from a certain subsystem of a root system of G. Further $z \in G$ is a regular unipotent element from a subsystem subgroup of type A_3. For a representation ϕ of an algebraic group S (for a S-module M0 and a unipotent element $u \in S$ denote by $J_\phi(u)$ the set of Jordan block sizes of a representation ϕ without their multiplicities. A dominant weight $\omega = a_1\omega_1 + \ldots + a_n\omega_n$ and an irreducible representation ϕ of G with such highest weight are called p-restricted if all $a_i < p$. Put $s(\phi) = 1 + 3a_1 + 4a_2 + \ldots + 4a_{n-1} + 3a_n$, $m(\phi) = \min(p, s(\phi))$ and $\omega^* = a_n\omega_1 + \ldots + a_1\omega_n$. It is well known that ω^* is a highest weight of a representation dual to ϕ.

Theorem 1. *Let $p \geqslant 11$, ϕ be a p-restricted irreducible representation of G with the highest weight $\omega = a_1\omega_1 + \ldots + a_n\omega_n$. Suppose that $a_k = a_{k+1} = a_{k+2} = 0$ for some $i < n-1$ and $m(\phi) = s(\phi)$. Then $J_\phi(z)$ equals to the same set for an irreducible representation of $A_n(\mathbb{C})$ with the highest weight ω and either $J_\phi(z) = \mathbb{N}_1^{m(\phi)}$, or one of the following conditions holds:*

1) $\omega = a_1\omega_1 + a_n\omega_n$, $a_1 a_n \neq 0$, $a_1 + a_n > 2$, $J_\phi(z) = \mathbb{N}_1^{m(\phi)} \setminus \{3a_1 + 3a_n\}$;

2) ω *or* $\omega^* = a_1\omega_1$, $a_1 > 2$, $J_\phi(z) = \mathbb{N}_1^{m(\phi)} \setminus \{3a_1, 3a_1 - 1, 3a_1 - 4, 2\}$;

3) $\omega = \omega_1 + \omega_n$, $J_\phi(z) = \{7, 5, 4, 3, 1\}$;

4) ω *or* $\omega^* = 2\omega_1$, $J_\phi(z) = \{7, 4, 3, 1\}$;

5) $\omega = \omega_j$, $1 < j < n$, $J_\phi(z) = \{5, 4, 1\}$;

6) ω *or* $\omega^* = \omega_1$, $J_\phi(z) = \{4, 1\}$.

Theorem 2. *Let p, ϕ, ω are the same as above, but $m(\phi) < s(\phi)$. Then $|J_\phi(z)| \geqslant p - 3$ and one of the following conditions holds:*