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SATELLITES AND PRODUCTS OF $\omega\sigma$-FIBERED FITTING CLASSES

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A Fitting class $\mathfrak{F} = \omega\sigma R(f, \varphi) = (G : O^{\omega}(G) \in f(\omega')$ and $G^{\varphi(\omega \cap \sigma_i)} \in f(\omega \cap \sigma_i)$ for all $\omega \cap \sigma_i \in \omega\sigma(G))$ is called an $\omega\sigma$-fibered Fitting class with $\omega\sigma$-satellite f and $\omega\sigma$-direction φ. By φ_0 and φ_1 we denote the directions of an $\omega\sigma$-complete and an $\omega\sigma$-local Fitting class, respectively. Theorem 1 describes a minimal $\omega\sigma$-satellite of an $\omega\sigma$-fibered Fitting class with $\omega\sigma$-direction φ, where $\varphi_0 \leq \varphi$. Theorem 2 states that the Fitting product of two $\omega\sigma$-fibered Fitting classes is an $\omega\sigma$-fibered Fitting class for $\omega\sigma$-directions φ such that $\varphi_0 \leq \varphi \leq \varphi_1$. Results for $\omega\sigma$-complete and $\omega\sigma$-local Fitting classes are obtained as corollaries of the theorems. Theorem 3 describes a maximal internal $\omega\sigma$-satellite of an $\omega\sigma$-complete Fitting class. An $\omega\sigma\mathcal{L}$-satellite is defined as an $\omega\sigma$-satellite f such that $f(\omega \cap \sigma_i)$ is the Lockett class for all $\omega \cap \sigma_i \in \omega\sigma$. Theorem 4 describes the maximal internal $\omega\sigma\mathcal{L}$-satellite of an $\omega\sigma$-local Fitting class. Questions of the study of lattices and further study of products and critical $\omega\sigma$-fibered Fitting classes are posed in the conclusion.

Keywords: finite group, Fitting class, $\omega\sigma$-fibered, $\omega\sigma$-complete, $\omega\sigma$-local, minimal $\omega\sigma$-satellite, maximal internal $\omega\sigma$-satellite, Fitting product.

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