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ON A BOUNDARY VALUE PROBLEM FOR HIGHER ORDER ELLIPTIC COMPLEX PARTIAL DIFFERENTIAL EQUATIONS

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Using the iterated Pompeiu-Vekua operators and a class of strongly singular integral operators, Schwarz boundary value problem is studied for higher order complex elliptic differential equations in the unit disc by transforming the equation

$$\frac{\partial^k w}{\partial \bar{z}^k} + \sum_{l=1}^{k-1} q_l^{(1)}(z) \frac{\partial^k w}{\partial \bar{z}^{k-l} \partial z^l} + \sum_{l=1}^{k-1} q_l^{(2)}(z) \frac{\partial^k \overline{w}}{\partial z^{k-l} \partial \bar{z}^l}$$
$$+ \sum_{l=0}^{k-1} \sum_{j=0}^{l} \left(a_{lj}(z) \frac{\partial^l w}{\partial \bar{z}^{l-j} \partial z^j} + b_{lj}(z) \frac{\partial^l \overline{w}}{\partial z^{l-j} \partial \bar{z}^j} \right) = f(z)$$

into a singular integral equation.