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**Ewa Tyszkowska\*** ([ewa.tyszkowska@mat.ug.edu.pl](mailto:ewa.tyszkowska@mat.ug.edu.pl)), Gdańsk, Poland. *On  $(q,n)$ -gonal pseudo-real Riemann surfaces.*

The moduli space  $\mathbb{M}_g$  of complex algebraic curves of genus  $g$  is a quasi-projective variety which can be defined in  $\mathbb{P}^n(\mathbb{C})$  by polynomials with rational coefficients. There is an antiholomorphic involution  $\iota : \mathbb{M}_g \rightarrow \mathbb{M}_g$  which maps the class of a complex curve to its conjugate. The fixed points of such a mapping are called *complex algebraic curves with real moduli*. The corresponding to them Riemann surfaces split into symmetric and pseudo-real. Symmetric surfaces admit an antiholomorphic involution (a symmetry) while pseudo-real have an antiholomorphic automorphism but no symmetry. A Riemann surface  $X$  is called  $(q,n)$ -gonal if it admits a conformal automorphism  $\rho$  of prime order  $n$  such that the orbit space  $X/\langle\rho\rangle$  has genus  $g$ . We determine the possible orders of antiholomorphic automorphisms of a pseudo-real Riemann surface of a given genus  $g$ . We find the necessary and sufficient conditions for the existence of a  $(q,n)$ -gonal automorphism of such a surface. In particular, we determine all possible values of  $p$  for which there exists a  $p$ -hyperelliptic involution of a pseudo-real Riemann surface of a given genus  $g$ . (Received July 31, 2015)