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**Bjoern Muetzel\*** (bjorn.muetzel@gmail.com), **Peter Buser** and **Eran Makover**. *Short non-separating loops on hyperbolic hyperelliptic surfaces*. Preliminary report.

For any hyperelliptic hyperbolic surface of genus  $g \geq 2$ , there exist  $g$  homologically non-trivial loops  $(\alpha_k)_{k=1, \dots, g}$ , such that

$$\ell(\alpha_k) \leq 4 \log \left( 2 \cdot \left( \frac{g-1}{g-k+1} \right) + 2 \right), \text{ for all } k \in \{2, \dots, g\}.$$

Especially the median length ( $k = \frac{g}{2}$ ) is bounded by  $4 \log(6)$  and the  $(\alpha_k)_k$  are bounded by  $4 \log(2g)$ .

We conjecture that at least  $\frac{g}{2}$  of these loops are homologically independent. (Received January 28, 2020)