1125-11-1665 **Christelle Vincent*** (`christelle.vincent@uvm.edu`). *Abel-Jacobi maps and Riemann points on hyperelliptic Riemann surfaces.* Preliminary report.

Let X be a compact Riemann surface of genus g equipped with a choice of an Abel-Jacobi map. This choice determines a point $r \in \mathbb{C}^g$ called the Riemann point, or the vector of Riemann constants. If X is a hyperelliptic curve, a further choice of labeling of the branch points of X with the symbols $1,\ 2, \dots 2g+1, \infty$ associates to this Riemann point a nonempty subset U of labels. In his seminal work on the characterization of hyperelliptic period matrices, Mumford shows that it is always possible to choose an Abel-Jacobi map such that the cardinality of U is $g+1$. In his own investigation of this same question, Poor shows that the cardinality of U must be congruent to $g+1$ modulo 4. In this talk, we define the Riemann point r, show how to attach to it the set U when X is hyperelliptic, and show the converse of Poor's result: for any nonempty subset of $\{1, 2, \dots 2g+1, \infty\}$ of cardinality congruent to $g+1$ modulo 4, there is a choice of Abel-Jacobi map such that this subset is the set U corresponding to the Riemann point. (Received September 18, 2016)