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**Ricardo Conceicao\*** (rconceic@gettysburg.edu), 300 N Washington st, Gettysburg, PA 17325, and **Rachael Kelly** and **Samuel VanFossen**. *Solutions of the Hurwitz equation over polynomial rings*. Preliminary report.

Let  $A$  and  $n$  be positive integers. The structure of the set of integral solutions of the equation

$$x^2 + y^2 + z^2 = Axyz \tag{1}$$

was first studied by Markov, because of its relationship to diophantine approximation. In particular, Markov showed that all integral solutions can be generated by the action of certain automorphisms of the hypersurface defined by (1) on the solution (1,1,1). Ever since, several authors have extended Markov's work to the study of solutions of (1) over finite fields and number fields. Our goal is to discuss some progress made in understanding the solutions of (1) over the polynomial ring  $k[t]$ , where  $k$  is a field. (Received July 19, 2017)