1146-20-151 **M. Brannan** and **Alexandru Chirvasitu*** (achirvas@buffalo.edu), 216 Mathematics Building, University at Buffalo, Buffalo, NY 14260-2900, and **K. Eifler**, **S. Harris**, **V. Paulsen**, **X. Su** and **M. Wasilewski**. *Symmetries of quantum graphs.*

"Isomorphism games" based around finite structures (e.g. graphs) are interactive procedures whereby two players answer questions posed by a referee regarding said structures. The players cannot communicate during the interaction, but they can agree upon a strategy for producing satisfactory answers. The game, when taking two graphs as the input, is devised so that a deterministic strategy requires that the two graphs be isomorphic. On the other hand, a probabilistic winning strategy relaxes this condition to the two graphs being quantum isomorphic; for this reason, these procedures are of interest for modeling quantum-information-theoretic algorithms.

I will describe versions of these games and link the notion of quantum isomorphism mentioned above to the theory of bi-Galois extensions between Hopf algebras coacting on the function algebras of the two graphs; this allows for a Hopf-algebraic interpretation of all of the above. I will also briefly mention how one can employ probabilistic methods to produce examples of pathological graphs with no quantum automorphisms. (Received January 18, 2019)