

## Lowell Abrams (Geo. Washington Univ.)

---

### Cellular Automorphisms of Surfaces and Self-Duality

---

#### Abstract for the Combinatorics Seminar 2012 April 26

---

Given a graph  $G$  cellularly embedded in a closed surface  $S$ , an automorphism of  $G$  is called a “cellular automorphism of  $G$  in  $S$ ” when, loosely speaking, it takes facial boundary walks to facial boundary walks. I will describe how Dan Slilaty and I constructed complete catalogs of all irreducible cellular automorphisms of the sphere, projective plane, torus, Klein bottle, and three-crosscap surface for a particular notion of reducibility related to taking minors.

We have also determined concrete procedures sufficient for constructing all possible self-dual embeddings in any closed surface  $S$  given a catalog of all irreducible cellular automorphisms in  $S$ .

I will illustrate by way of examples some of these procedures and some resulting self-dual graphs.

This talk is based on joint work with Dan Slilaty.

---

From:

<https://www2.math.binghamton.edu/> - **Binghamton University Department of Mathematical Sciences**

Permanent link:

<https://www2.math.binghamton.edu/p/seminars/comb/abstract.201204abr>

Last update: **2020/01/29 19:03**

