1014-53-1521 **Martin Pinsonnault*** (`mpinsonn@fields.utoronto.ca`), Fields Institute, 222 College Street, 2nd floor, Toronto, Ontario M5T 3J1, Canada. *Spaces of symplectic embeddings of disjoint balls in* $\mathbb{C}P^2$. Preliminary report.

Recently, Lalonde and Pinsonnault investigated the rational homotopy type of the space $\mathrm{Emb}(B_c, M)$ of symplectic embeddings of the standard ball B_c of capacity c into a symplectic ruled 4-manifold (M, ω). Their main result is that, for fixed (M, ω), the homotopy type of this space change only when the capacity c crosses a critical value λ that depends only on the cohomology class $[\omega]$. The method is based on an analysis of the relations between the group of symplectomorphisms of a manifold M, the group corresponding to its blow-up $\tilde{M}$, and the space of symplectic balls in M. It turns out that this method, which relies on the Inflation lemma of Lalonde-McDuff and on previous results of Gromov and Abreu-McDuff, can be adapted to study other spaces of interest. In this paper, we apply these ideas to the study of the rational homotopy type of the space of symplectic embeddings of a disjoint union of N balls into the projective plane $\mathbb{C}P^2$, focussing on the cases $N = 2$ and $N = 3$. (Received September 28, 2005)