Jan WIEGERINCK (janwieg@wins.uva.nl), Institute of Mathematics, University of Amsterdam, 1018 TV Amsterdam, Netherlands, ***The boundary of the unit ball of H^1.***

ABSTRACT. Let $\mathbb{D}$ be the unit disc in $\mathbb{C}$. The Hardy space $H^1(\mathbb{D})$ can be defined as the closure of the holomorphic polynomials in the L^1-norm on the boundary of $\mathbb{D}$. Extreme, exposed and strongly exposed boundary points of the unit ball in $H^1(\mathbb{D})$ have been studied extensively. In particular, good characterizations of extreme and strongly exposed points are available. We will review some of these and then pass to $H^1(\mathbb{B}_2)$, the Hardy space of the unit ball in $\mathbb{C}^2$. Here there are only scattered results. However, the subspace of $H^1(\mathbb{B}_2)$ consisting of functions that depend only on, say, the first variable, is easier to handle. It can be identified with the Bergman space $A^1(\mathbb{D})$ that consist of holomorphic functions that are in $L^1(\mathbb{D})$. While it is easy to see that all boundary points of the ball in $A^1(\mathbb{D})$ are exposed, not all of them are strongly exposed. We will give an example of an exposed point that is not strongly exposed. The main result is that a large class of strongly exposed points is identified. This class includes the holomorphic polynomials of norm 1. This is joint work with Paul Beneker.