

## Re: The flight of a spinning table-tennis ball

**Source:** <http://sci.tech-archive.net/Archive/sci.math/2004-06/1584.html>

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**From:** |-|erc (gotcha\_at\_beauty.com)

**Date:** 06/09/04

Date: Wed, 09 Jun 2004 06:37:22 GMT

"TimR" <timothy42b@aol.com> wrote in

- > *Okay, here's my understanding.*
- >
- > *Areas of low and high pressure are meaningless. They aren't large*
- > *enough in magnitude to affect the flight of the ball and they are a*
- > *consequence of the motion, not the cause.*
- >
- > *Without showing the math, which means this post is completely*
- > *worthless, here's what happens.*
- >
- > *A ball spinning counterclockwise seen from above and moving forward*
- > *will curve to the left. That is obvious from experience. That is*
- > *because as it spins it collects some air (through entrainment next to*
- > *the boundary layer) and tosses it back and to the right. Throw the*
- > *air in one direction, get a reaction force in the other, basic Newton.*
- > *I'm guessing, but it seems likely that the way you apply that force*
- > *to the air you are throwing is by shear, viscous forces. Since the*
- > *air moves, a pressure gradient develops also, but it is secondary and*
- > *has little impact on flight of the ball.*

like a rudder? that would push the back of the ball though and slow the spinning.

say the ball is stationary and spinning fast. the imperfections build up a rotating surrounding sphere of moving air like a hurricane. a slight force forward will move the ball to the left as pressure on the left side will decrease and pressure on the right side will increase. turbulence behind the ball is more an effect of a fast moving ball and slow spin. the ball is light it doesn't need much force to change directions.

Herc