Paper Pack's Curving Tracking Path Analysis and Its Application Suggestion

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Most people enthuse about watching curving ball made by baseball player. Perhaps, it's because it's difficult to make curving ball to general people. but we found the way which make curving ball easily even to general people. We saw tracking path of paper pack curving when it was pitched with spinning. and it reminded us of 'Magnus effect' which is curving ball's cause. To demonstrate that rectangular-shaped paper pack's curving tracking path is because of Magnus force, we measured velocity of spinning paper pack's upper and lower air, confirmed whether there is or not paper pack's pressure difference found by Bernoulli's principle. As a result, we could find pressure difference, so could conclude its curving tracking path is because of Magnus force. For the application of this fact, first, we set the hypothesis that paper pack's spinning against wind made by wind tunnel correspond with paper pack' spinning pitched in the opposite side of the wind. then we had experiments on Magnus force according to paper pack's RPM, axis, velocity, and mass, analyzed its tracking paths comparing with several factors. Especially, unlike ball, paper pack's tracking is different according to axis, because it's rectangular-shaped. Having these experiments, we felt paper pack's educational value. First, paper pack is so light that its tracking path curve easily by even little Magnus force. Second, there are many paper pack's factor to change tracking paths than ball, so because it represents various tracking paths, children or student will be interested about this phenomenon.