



USING DIGIPAC TO MODEL POPCORN PACKING



Popcorn (*Zea mays everta*)

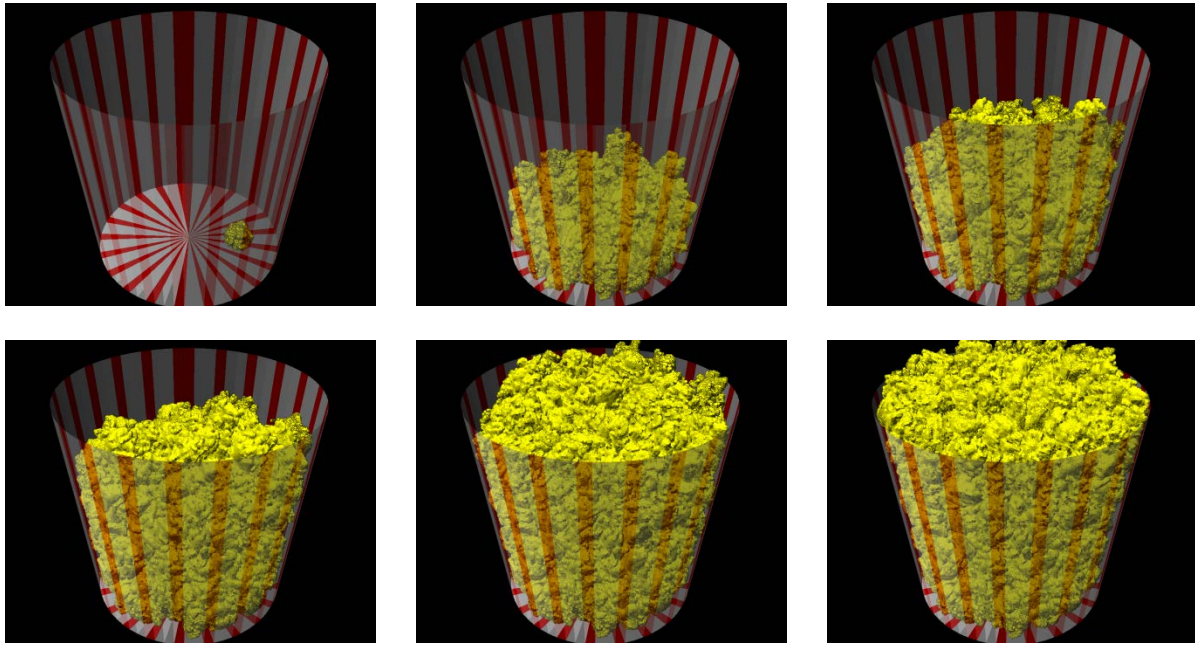
Popcorn is a familiar snack food commonly consumed at movie theatres, sporting and other recreational events. Popped popcorn is highly irregularly shaped, which makes it ideal for analysis with DigiPac™ digital algorithms.

Researchers at the University of Leeds and the University of Nebraska-Lincoln have been using DigiPac™ to determine the packing characteristics of popcorn within rigid containers, for different hybrids and polymorphisms.

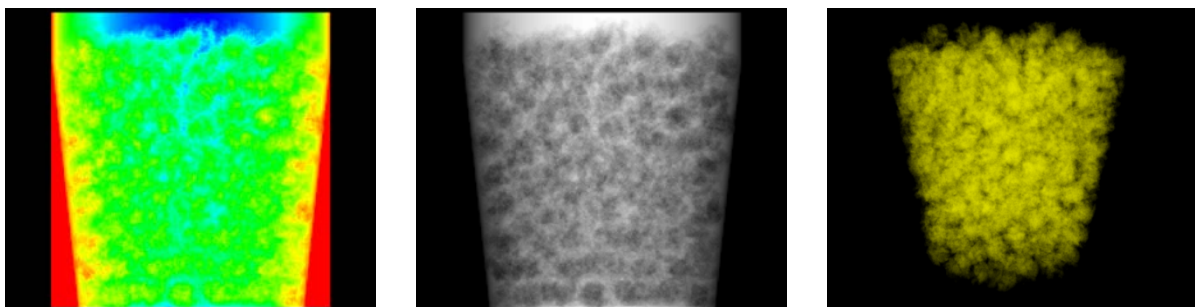


Digital models of popcorn pieces

Real popcorn pieces were scanned using X-ray microtomography at a resolution of 240 μm per voxel, and were allowed to drop into a tub shaped container modelled on a standard medium sized movie theatre tub. The bulk density was then measured and compared to physical experiments. DigiPac™ was shown to accurately predict – within a few per cent - the bulk density and number of pieces of popcorn in the container. This analysis is of great interest to the popcorn foods industry, as popcorn kernels are bought by weight and sold by volume. Similar analysis of bulk density and packing fractions could be applied to many other fast moving consumer goods.



Stages in the DigiPac™ simulation



DigiPac™ provides complex analysis and statistics for packed containers

Further Information

Please contact David Knight at d.knight@structurevision.com for more information on how DigiPac™ can be used to model complex packing problems.

A video of the packing process is available at <http://youtu.be/hxFJu3mvSg8>

More information on DigiPac™ is available at www.structurevision.com