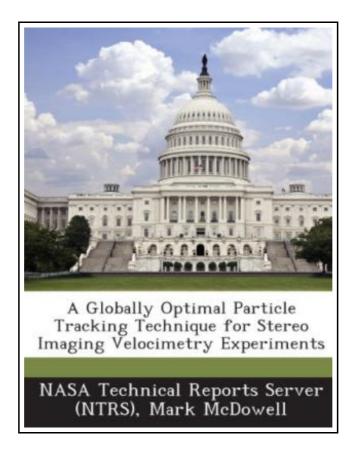
## A Globally Optimal Particle Tracking Technique for Stereo Imaging Velocimetry Experiments



Filesize: 8.72 MB

### Reviews

These sorts of book is the perfect book accessible. It is amongst the most amazing book i have got read. I found out this ebook from my i and dad advised this book to find out.

(Mr. Mustafa Sanford IV)

# A GLOBALLY OPTIMAL PARTICLE TRACKING TECHNIQUE FOR STEREO IMAGING VELOCIMETRY EXPERIMENTS



BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 28 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.An important phase of any Stereo Imaging Velocimetry experiment is particle tracking. Particle tracking seeks to identify and characterize the motion of individual particles entrained in a fluid or air experiment. We analyze a cylindrical chamber filled with water and seeded with density-matched particles. In every four-frame sequence, we identify a particle track by assigning a unique track label for each camera image. The conventional approach to particle tracking is to use an exhaustive tree-search method utilizing greedy algorithms to reduce search times. However, these types of algorithms are not optimal due to a cascade effect of incorrect decisions upon adjacent tracks. We examine the use of a guided evolutionary neural net with simulated annealing to arrive at a globally optimal assignment of tracks. The net is guided both by the minimization of the search space through the use of prior limiting assumptions about valid tracks and by a strategy which seeks to avoid high-energy intermediate states which can trap the net in a local minimum. A stochastic search algorithm is used in place of back-propagation of error to further reduce the chance of being trapped in an energy well. Global optimization is achieved by minimizing an objective function, which includes both track smoothness and particle-image utilization parameters. In this paper we describe our model and present our experimental results. We compare our results with a nonoptimizing, predictive tracker and obtain an average increase in valid track yield of 27 percent. This item ships from La Vergne,TN. Paperback.

- Read A Globally Optimal Particle Tracking Technique for Stereo Imaging Velocimetry Experiments Online
- Download PDF A Globally Optimal Particle Tracking Technique for Stereo Imaging Velocimetry Experiments

### You May Also Like



#### **Animalogy: Animal Analogies**

Sylvan Dell Publishing. Paperback. Book Condition: New. Cathy Morrison (illustrator). Paperback. 32 pages. Dimensions: 9.8in. x 8.4in. x 0.4in.Compare and contrast different animals through predictable, rhyming analogies. Find the similarities between even the most incompatible...

Read PDF »



# The Whale Tells His Side of the Story Hey God, Ive Got Some Guy Named Jonah in My Stomach and I Think Im Gonna Throw Up

B&H Kids. Hardcover. Book Condition: New. Cory Jones (illustrator). Hardcover. 32 pages. Dimensions: 9.1in. x 7.2in. x 0.3in.Oh sure, well all heard the story of Jonah and the Whale a hundred times. But have we...

Read PDF »



#### God Loves You. Chester Blue

Henry and George Press. Paperback. Book Condition: New. Ursula Andrejczuk (illustrator). Paperback. 140 pages. Dimensions: 8.0in. x 5.2in. x 0.3in.BEAUTIFUL NEW ILLUSTRATIONS BRING THE STORY TO LIFE!A charming book about a mysterious bear that shows...

Read PDF »



#### When Santa Claus Prayed

Xulon Press. Paperback. Book Condition: New. Paperback. 28 pages. Dimensions: 9.0in. x 8.1in. x 0.3in.Dad, youre wrong about Santa Claus! I cant sit on baby Jesuss lap or even see him! I cant send letters...

Read PDF »



#### Good Night, Zombie Scary Tales

Feiwel & Friends. Paperback. Book Condition: New. Iacopo Bruno (illustrator). Paperback. 112 pages. Dimensions: 8.2in. x 5.4in. x 0.2in.Welcome. Have a seat. Ignore the shambling undead outside. Let us tell you a story. But be...

**Read PDF** »