<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A Validation Study of Cloud Scene Simulation Model Temporal Performance</strong></td>
<td>Mar 1999</td>
<td>Glenn Kerr, AIR FORCE INST OF TECH WRIGHT-PATTERSONAFB OH SCHOOL OF ENGINEERING</td>
<td>112</td>
</tr>
<tr>
<td><strong>The Integration of the PSU/NCAR Mesoscale Model (MMS) with the Phillips Laboratory Cloud Scene Simulation Model (CSSM)</strong></td>
<td>Apr 30, 1996</td>
<td>A. A. Setayesh, RADEX INC BEDFORD MA</td>
<td>21</td>
</tr>
<tr>
<td><strong>Atmospheric Scene Simulation Modeling and Visualization</strong></td>
<td>Apr 15, 1996</td>
<td>Maureen E. Cianciolo, Mark E. Raffensberger, Eric O. Schmidt, John R. Stearns, ANALYTIC SCIENCES CORP READING MA</td>
<td>118</td>
</tr>
<tr>
<td><strong>Development of an Atmospheric Scene Simulation Model</strong></td>
<td>May 14, 1998</td>
<td>Ryan B. Turkington, Maureen E. Cianciolo, Mark E. Raffensberger, ANALYTIC SCIENCES CORP READING MA</td>
<td>177</td>
</tr>
</tbody>
</table>
... taken over Columbia, Missouri and forecasted cloud amounts rather than climatological values. The second was a new approach using the Cloud Scene Simulation Model developed by Phillips Laboratory. Cloud scenes were generated using forecasted cloud fields, meteorological inputs, and thirty random... methods. Stratatus, altocumulus, cumulus, and altocumulus cloud types were independently examined with the CSSM generated cloud scenes. Each method and cloud type were compared against the known CFLOS probability... as much as twelve per cent with horizontal cloud coverage ranging from 30 to 80 per cent...

Solar Flux Initialization Schemes for Distributed Surface Energy Budget Modeling
Aug 2003 71 pages
Authors: George G. Koenig; David H. Tofsted; ENGINEER RESEARCH AND DEVELOPMENT CENTER HANOVER NH COLD REGIONS RESEARCH AND ENGINEERING LAB
... surface temperatures. For partly cloudy and cloudy skies only the AIM model can mimic the spatial variability observed with the measured solar fluxes. The Cloud Scene Simulation Model (CSSM) was used to determine the spatial variability of the clouds. The cloud distributions were then used by AIM to produce the variations of the surface solar loading. CSSM also has the capability to produce the temporal variations in the cloud fields for short periods of time. Thus, it would be possible to use CSSM and AIM to produce the...

Integrated Efforts for Analysis of Geophysical Measurements and Models
Sep 26, 1997 234 pages
Authors: S. M. Aver; C. A. Hein; G. P. Seeley; J. N. Bass; M. J. Kendra; RADEX INC BEDFORD MA... 
... , and mathematics of the atmosphere and near space. Projects undertaken and reported include spacecraft, ionospheric, atmospheric, and astronomical circumpositions; data based studies of air combat targeting; meteorology including cloud scene simulation and ITASCA expert system; ionospheric scintillations; atmospheric metal deposition; auroral particle and electric field modeling, magnetic field studies for CRRES; atmospheric density models, databases and drag;...

Cloud Simulation Using HEFeS-Hierarchical Environmental Feature Structure
Apr 11, 1996 36 pages
Authors: Albert R. Boehm; J. H. Willand; HUGHES STX CORP LEXINGTON MA
... The goal is to rapidly simulate cloud scenes including radiances using a large variety of cloud structure associated with a given area and season. HEFeS uses a hierarchy of climate objects for nine... 95% coldest temperature) to be generated. Instead of using ray tracing methods to render a scene, radiometric properties are precalculated for each object under various lighting conditions and stored as prototype objects... These are stretched to adjust for viewing perspective, exact lighting, and individual shapes. The resulting scene is consistent with climatology and the physics of the atmosphere.

Two Models for Predicting the Probability of a Cloud-Free Line-of-Sight
Nov 8, 2002 54 pages
Authors: Susan A. Triantafillou; Guy P. Seeley; RADEX INC BEDFORD MA... 
... from space-borne sensor to a missile or other object. The models, which account for various cloud conditions and zenith angles, are suitable for military training and simulation purposes. One approach uses a set of detailed models to generate a cloud scene and randomly place m illnesses within it. A simulated sensor then detects... that remains visible between clouds from a collection of scenes is the PCFLOS. This calculation relies on cloud metrics that are evaluated in consideration of meteorological observations and then tuned to improve agreement with the...

Validation Report for the Celestial Background Scene Descriptor (CBSD)
Feb 2001 83 pages
Authors: Paul V. Noah; Meg A. Noah; MISSION RESEARCH CORP NASHUA NH
This report provides detailed information on the evolving improvements and verification of the AFRL/HRS Celestial Background Scene Descriptor (CBSD) Zodiacal Emission code (CBZODY). The CBZODY model predicts the flux from the solar system dust cloud for a given line-of-sight or field-of-view that would be detected by optical and infrared sensor systems. CBZODY is currently in use by the MDA as a component of the SSGM simulation package and as part of the AFRL PLEXUS R3V2 atmospheric effects modeling suite.

Weather and Atmospheric Effects for Simulation, Volume 1: WAVES98 Suite
Overview
Sep 1998 27 pages
Authors: Patti Gillespie; Alan Wetmore; David Ligon; ARMY RESEARCH LAB ADELPHI MD
The Weather and Atmospheric Effects for Simulation (WAVES) suite of models calculates and visualizes environmental effects due to natural clouds, haze, and fog. These models determine the illumination through multiple inhomogeneous cloud layers and the resulting radiance field. Other effects calculated with these models are forward scattering and... in the viewing of input, output, and intermediate data within WAVES. This suite of models can simulate a scene or can be used to modify an image. This overview discusses the scope of this modeling suite, and maps the other...