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Abstract Submitted
for the DPP04 Meeting of
The American Physical Society

Sorting Category: 5.6.4

Potential Electron Bernstein Wave Heating Experiments on PEGASUS[1] G.D. GARSTKA, R.J. FONCK, E.A. UNTERBERG, University of Wisconsin-Madison, P.C. EFTHIMION, G. TAYLOR, Princeton Plasma Physics Laboratory — The electron Bernstein wave (EBW) is being studied for use in a wide variety of high-beta confinement devices where the plasma is overdense. The EBW is of particular interest in spherical torus (ST) experiments, where it could be used both as an electron temperature diagnostic and as a technique for heating and current drive. The PEGASUS Toroidal Experiment provides an attractive opportunity for investigating the physics and implementation of EBW heating and for developing scenarios for larger experiments such as NSTX. It operates at low toroidal field ($B_t < 0.15$ T), allowing the utilization of abundant, low-cost 2.45 GHz hardware and sources. Recent upgrades to the experiment provide for programmable position control which is essential for good coupling of the fast X-mode to the EBW. Planning has begun for a 1 MW heating and current drive experiment on PEGASUS. Raytracing calculations, antenna designs, diagnostic requirements and experimental possibilities are presented.

[1]Work supported by U.S. D.O.E. Grant DE-FG02-96ER54375 and U.S. D.O.E. Contract DE-AC02-76CH03073.

☐ Prefer Oral Session
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Gregory Garstka
garstka@engr.wisc.edu
University of Wisconsin-Madison

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Date submitted: July 23, 2004 Electronic form version 1.3

lat21065.gif Fri Jul 23 00:52:26 EDT 2004

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\documentstyle[11pt,apsab]{article}
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\MeetingID{DPP04}
%\DateSubmitted{20040723}
\SubmittingMemberSurname{Garstka}
\SubmittingMemberGivenName{Gregory}
%\SubmittingMemberID{60017983}
\SubmittingMemberEmail{garstka@engr.wisc.edu}
\SubmittingMemberAffil{University of Wisconsin-Madison}
\PresentationType{poster}
\SortCategory{5.6.4}{}{}
\SpecialInstructions{Please place as number 7 out of 7 Pegasus posters, after Eidietis et al.}

\begin{document}
\Title{Potential Electron Bernstein Wave Heating Experiments on {\sc Pegasus}}
\titlenote{Work supported by U.S. D.O.E. Grant DE-FG02-96ER54375 and U.S. D.O.E. Contract DE-AC02-76CH03073.}
\AuthorSurname{Garstka}
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\AuthorGivenName{G.D.}
\AuthorSurname{Fonck}
\AuthorGivenName{R.J.}
\AuthorSurname{Unterberg}
\AuthorGivenName{E.A.}
%\AuthorEmail{email@address}
\AuthorAffil{University of Wisconsin-Madison}
\AuthorSurname{Efthimion}
\AuthorGivenName{P.C.}
\AuthorSurname{Taylor}
\AuthorGivenName{G.}
\AuthorAffil{Princeton Plasma Physics Laboratory}
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\begin{abstract}
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