

# **Current Developments in Mathematics, 2006**

*Editors:*

David Jerison  
Barry Mazur  
Tomasz Mrowka  
Wilfried Schmid  
Richard Stanley  
Shing-Tung Yau



**International Press**

Editorial board:

B. Mazur  
W. Schmid  
S.-T. Yau

D. Jerison  
T. Mrowka  
R. Stanley

Harvard University  
Cambridge, MA 02139

Massachusetts Institute  
of Technology  
Cambridge, MA 02138

Copyright © 2008 by International Press

International Press  
P.O. Box 43502  
Somerville, MA 02143

All rights reserved. No part of this work can be reproduced in any form, electronic or mechanical, recording, or by any information storage and data retrieval system, without specific authorization from the publisher. Reproduction for classroom or personal use will in most cases be granted without charge.

Current Developments in Mathematics, 2006

ISBN 978-1-57146-167-4

Printed on acid free paper in the United States of America

# Contents

<b>The Sato-Tate conjecture, <i>L. Clozel</i>.....</b>	<b>1</b>
<b>Gauge theory, ramification, and the geometric Langlands program, <i>S. Gukov and E. Witten</i>.....</b>	<b>35</b>
<b>Complex singularities of the Burgers system and renormalization group method, <i>D. Li and Ya.G. Sinai</i> .....</b>	<b>181</b>
<b>A biased view of symplectic cohomology, <i>P. Seidel</i> ..</b>	<b>211</b>
<b>Global behaviour of nonlinear dispersive and wave equations, <i>T. Tao</i> .....</b>	<b>255</b>