

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Invariant manifolds and foliations</b>	<b>11</b>
2.1	Construction of foliations and invariant manifolds . . . . .	12
2.2	Saddle-saddle type homoclinic bifurcation . . . . .	33
2.3	Generalized homoclinic orbits . . . . .	36
<b>3</b>	<b>Homoclinic intermittency</b>	<b>45</b>
3.1	Properties of the Poincaré return map . . . . .	46
3.2	An orientable centre manifold . . . . .	48
3.3	A nonorientable centre manifold . . . . .	62
<b>4</b>	<b>Suspended basic sets</b>	<b>67</b>
4.1	Properties of the Poincaré return map . . . . .	68
4.2	The orientable suspended horseshoe . . . . .	71
4.3	The nonorientable suspended horseshoe . . . . .	77
4.4	Several generalized homoclinic orbits . . . . .	85
<b>A</b>	<b>Invariant foliations</b>	<b>91</b>
A.1	Linearisation on a centre manifold . . . . .	93
A.2	Smoothness of foliations . . . . .	99
	<b>Bibliography</b>	<b>123</b>